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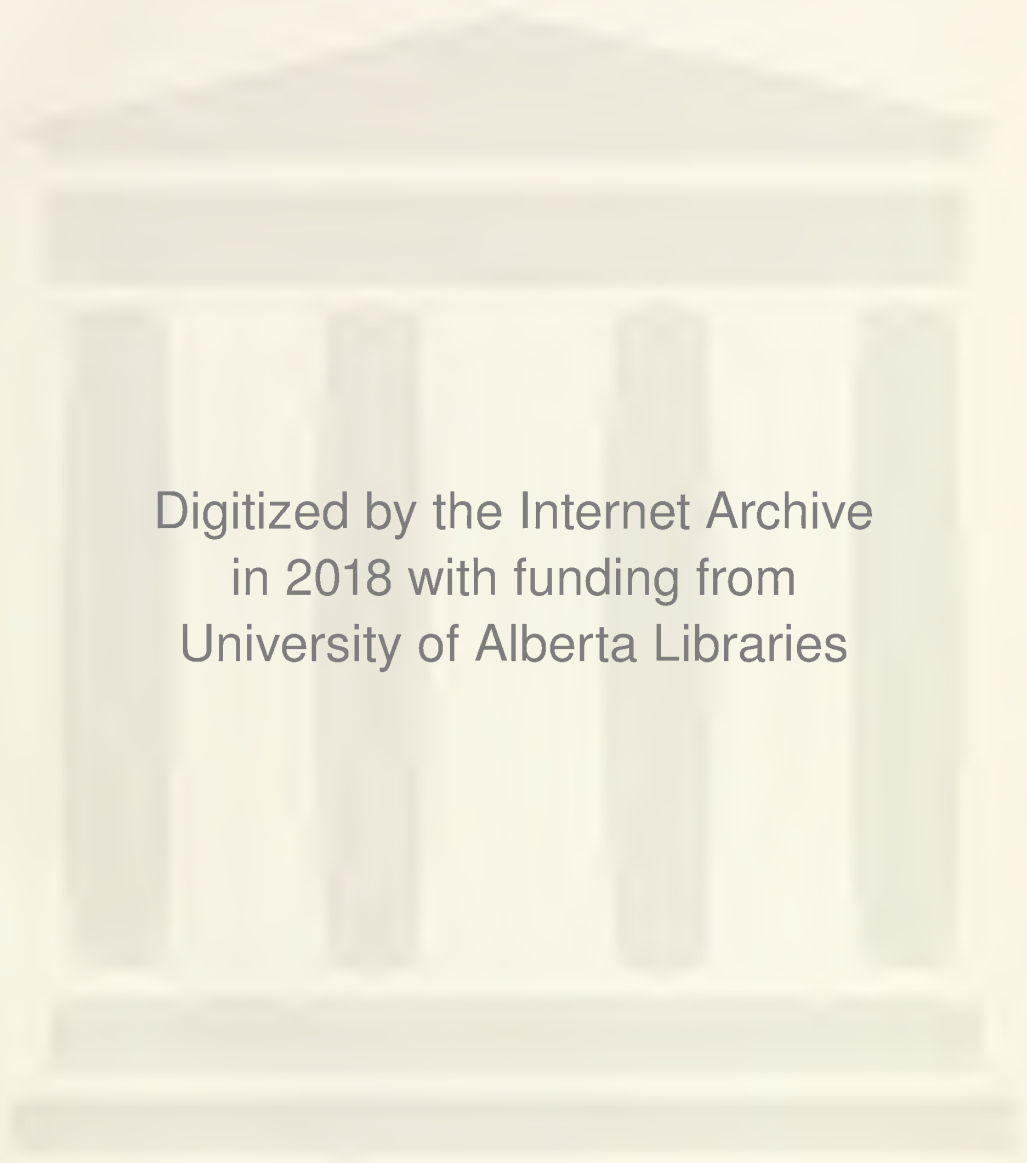
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THE UNIVERSITY OF ALBERTA

A COMPARATIVE STUDY OF EXAMINATION RESULTS
GRADES IX AND XII IN ONE TOWN SCHOOL AND
IN THREE RURAL CENTRALIZED SCHOOLS
IN THE COUNTY OF PONOKA

by

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CHAPTER I

THE BACKGROUND OF THE PROBLEM, THE PROBLEM, DEFINITIONS

1. THE BACKGROUND OF THE PROBLEM

In 1938 the Alberta Legislature passed a school act which provided for, and made compulsory, the re-organization of school districts in the rural areas other than cities.¹ The result was that some six thousand school districts were reduced to sixty school divisions. Each school division was administered by a School Board and this Board was responsible for an area in which approximately one hundred teachers were employed.

Since 1938 consolidation of one-room schools has been very rapid. For example, east of Ponoka there once existed such school districts as Magic, Calumet, Asker, Water Glen, Ellice, and Climax. In 1949 the schools from these districts were combined into one large rural centralized school called Mecca Glen. This consolidation and building of rural centralized schools has taken place throughout the County of Ponoka as it has also in other parts of Alberta. Over half of the school divisions or counties in the province of Alberta have

¹The School Act, Alberta, (R.S.A. 1955, c. 297, s. 23), p. 13.

rural school centralizations. A few of these centralized schools teach up to only grade eight or nine, but many of the centralizations teach up to grade eleven and are very similar to the rural centralizations in the County of Ponoka.

In the County of Ponoka, within about a twenty-mile radius of the town of Ponoka, are three rural centralized schools--the aforementioned Mecca Glen, and two others, Crestomere, and Sylvan Heights. Mecca Glen School is approximately fifteen miles east of Ponoka and has an enrolment of about two hundred fifty students. Crestomere is approximately fifteen miles west of Ponoka and also has an enrolment of about two hundred fifty students. The third centralized school, Sylvan Heights, is about twenty-five miles northwest of Ponoka and has an enrolment of about one hundred students.

The three schools are similar in that their students all come from farms and are bussed to and from school every day. The schools are also similar in that they do not offer grade twelve. A student from these schools who wishes to take grade twelve must go to some other high school--usually the Ponoka High School. The County of Ponoka pays such a student one dollar per school day, but the student is responsible for providing his own accommodation in town or, if he commutes, his own transportation.

2. THE PROBLEM

This arrangement whereby the student takes his schooling from grades one to eleven in the centralized school and grade twelve in the Ponoka High School, although quite satisfactory on the surface, has been subject to several criticisms:

- (a) The one dollar per day allowance may not cover the cost of schooling the student.
- (b) There is a break in continuity and a readjustment required when the student leaves one school and goes to another, even if it is in the same County.
- (c) Parental control is weakened or lacking entirely when the student is living in town and his parents are on the farm. For the mature student this responsibility for his own conduct may be a good thing, but for the immature student it could mean neglect of homework, bad company, and late nights.
- (d) The three centralized schools are not doing a good job of preparing their students for the grade twelve work which these students encounter when they enter the large Ponoka High School.

Dissatisfaction with the work of these centralized schools is coming from three sources:

- (a) Several parents, privately, and in public, at

Home and School meetings, have expressed the opinion that their children are not doing very well in grade twelve.

- (b) Several students have, at considerable expense to themselves, decided to take both grades eleven and twelve at the Ponoka Senior High School where they feel that they are taught better and learn more.
- (c) There have always been rumours that some of the town teachers were dissatisfied with the students coming from the centralized schools. This dissatisfaction was brought to a climax in September, 1958, when a Ponoka teacher openly stated that high school pupils from the rural centralized schools were deficient in their knowledge of science. Several other teachers from the Ponoka Senior High School have also claimed that centralized school students coming to Ponoka had weak backgrounds and have informed these students to that effect.

These events have created some ill-feeling, discord, and confusion. Also, there are some people who think that the morale of the rural students has been undermined. They feel that it is natural that the centralized school students

would have misgivings about going to a school which is considered inferior.

A problem exists. How well are students actually doing at the rural centralized schools in comparison to students at the Ponoka schools? The best way to resolve a problem is not with accusations but with facts. The purpose of this study is to attempt to shed some light on this problem.

As was stated earlier, the rural centralized school situation is not unique to the County of Ponoka. Many other divisions also have rural centralized schools. Are these schools doing a good job? Should expensive gymnasiums, industrial arts shops, and home economics classrooms be added to the existing schools? There is continuous pressure from the public on school boards to provide these facilities. Do the educational results at these schools warrant the additional expense? Those answering in the affirmative feel that these schools are doing a satisfactory job and that they are entitled to the same facilities as are available at the Ponoka Schools.

Those answering in the negative feel that the cost per high school pupil of maintaining these schools is too high. But they also feel that the cost is not the important factor. They feel that the students' educational interests could be better served by housing the rural high school students in

town dormitories.

There are others who say that dormitories have been tried and are not the answer. They feel that perhaps the rural centralized schools should teach only grades one to nine inclusive but that the senior high school students should be bussed daily to the large Ponoka Senior High School.

3. DEFINITION OF TERMS

The centralized schools referred to are the rural schools of Crestomere, Mecca Glen, and Sylvan Heights in the County of Ponoka.

The Ponoka school is the Ponoka Senior High School for the grade twelve students and the Ponoka Junior High School for the grade nine students.

The pupils at the rural centralized schools are, almost without exception, from farm homes. However, the pupils at the Ponoka school can be divided into two main groups: a large urban group and a smaller group of farm students who are bussed into town. In order to ensure that the two populations compared were as nearly alike as possible, only those students at the Ponoka school who were from farms and who were bussed into town were considered. Therefore, when mention is made of Ponoka school students, the

reference is to those students who are bussed in from farm homes to Ponoka and transported back to their farm homes every day. These students will have received most, if not all, of their schooling at the Ponoka schools. Ponoka school examination results are the examination results of these students only.

Because grade twelve subjects are not taught at the rural centralized schools, reference to the centralized schools' grade twelve students or to the grade twelve examination results of the centralized schools is to those students from the rural centralized schools who took their grade twelve at the Ponoka Senior High School and to their examination results.

4. DELIMITATION OF THE PROBLEM

This study did not attempt to evaluate the dollar per day transportation allowance. Such factors as the reason for the allowance, whether it was too little or too much, whether or not it should be continued, were not dealt with here. As will be shown later, this allowance was not pertinent to the main problem of this study.

This study also did not attempt to ascertain the relative advantages and disadvantages of a rural student

living in town with or without greatly reduced parental control.

This study did not attempt to provide or explain reasons for the building of centralized schools, the building of additional facilities such as science laboratories, shops, home economics rooms, gymnasiums, or the financing of these buildings.

The study did attempt to determine the relative effectiveness of the two types of schools--the Ponoka schools, and the rural centralized schools. This was done by determining whether or not any difference existed in the examination results of the two types of schools. The examination results investigated were for three years: 1957, 1958, and 1959.

Of course, better examination results do not necessarily decide which are the better schools. There are other criteria² for judging schools. However, the investigation was limited to the following null hypotheses:

- (a) There is no significant difference in achievement, as measured by the results of the grade nine departmental examinations, between the

²Paul R. Mort, Principles of School Administration, New York, McGraw-Hill Book Co. Inc., 1946, pp.11-23.

grade nine farm students of the Ponoka school and the grade nine students from the three centralized schools.

- (b) There is no significant difference in achievement, as measured by the results of the grade twelve departmental examinations, between the grade twelve farm students of the Ponoka school and the grade twelve students from the centralized schools who take their grade twelve at the Ponoka school.

The students studied in grade twelve were not the same students studied in grade nine. To use the same group would have meant going back three years in the records of the grade twelve students to a time when one of the centralized schools, Sylvan Heights, did not exist. An alternative would have been to wait a period of three years until the grade nine students reached grade twelve. This was not done. However, it is not unreasonable to assume that the groups are similar.

At the grade twelve level it was not always possible to make a year-to-year comparison of a subject because so few students had taken that subject. For example, only one Ponoka student took French 30 in 1958. As a result

the marks in French were combined for the three years, 1957, 1958, and 1959. This was also done in Physics 30. Biology 32 results were combined for the two years 1957 and 1958.

The cumulative records of most of the schools were found to be either incomplete or nonexistent. As a result I.Q.'s and other data were unavailable. There was no general uniform testing program throughout the County of Ponoka although one is now being initiated.

In summary, then, Alberta has moved rapidly since 1938 from small school districts to large school divisions and counties and this has been accompanied by a change from small schools to large schools.

Many of the large schools are rural centralized schools. Students are bussed to these rural schools and transported back to their homes every day.

In the County of Ponoka these rural centralized schools do not teach grade twelve subjects. Students who wish to complete their high school education must go to some town school such as the Ponoka Senior High School.

Criticism has come from some students, some parents, and even from a few Ponoka Senior High School teachers, that the rural centralized schools are not doing as effective a

job as the Ponoka town schools are doing.

This study endeavoured to evaluate the criticism by attempting to find out whether or not rural students at the Ponoka schools have examination results superior to those of students from the rural centralized schools.

CHAPTER II

REVIEW OF LITERATURE AND RELATED STUDIES

The Report of the Royal Commission on Education in Alberta pointed out that centralized schools have become the typical schools of rural areas in Alberta. These schools have replaced the rural one-room school which served both as school and as community centre. The disappearance of the school as a community centre was felt to be a minor disadvantage when compared to the educational advantages of the larger units.¹

The Report² went on to say that rural education had undoubtedly been improved but that it was unlikely that these centralized schools would be able to meet all the demands of future rural education. The Report advocated the establishment of community colleges as the next step in the advancement of rural education.

At the time of this study, the high schools at the rural centralizations of Crestomere, Mecca Glen, and Sylvan Heights were classified as small high schools, schools in which the ratio of teachers to grades was less than one.

¹Report of the Royal Commission on Education in Alberta (Edmonton: Queen's Printer, 1959), p. 382.

²Ibid., p. 383.

The Report of the Royal Commission³ stated that such small high schools could not offer their pupils standard instruction time in a subject.

The Report also stated that these small high schools had a lower pupil achievement and a higher pupil drop-out rate than did larger schools.

The commission does not suggest the indiscriminate wiping-out of all small high schools, for there are many areas in Alberta where they are the only kind possible. However, in too many areas the small high school is perpetuated in hamlets and villages by small vested interests and by unawareness of its educational shortcomings. The small high school should be limited to what it can provide effectively: a good academic program serving a limited group in a narrow field, or a good general program serving all--but not both.⁴

E. Hilton stated, "A good many rural schools are too small."⁵ Hilton explained that in health services, library services, group projects and discussions, instruction time, and breadth of curriculum, the pupils of the smaller schools were at a disadvantage.

A. C. Lambert wrote:

The social, cultural, and occupational horizons of many pupils, especially those in junior and senior

³Ibid., p. 384.

⁴Ibid., p. 384.

⁵Ernest Hilton, Rural School Management (New York: American Book Co., 1949), p. 12.

high schools, are changed significantly by their experience in larger schools.⁶

Dawson and Butterworth⁷ pointed out that consolidation came about as a natural result of changes in agriculture, transportation, and educational needs. It was not possible to build schools of adequate size within walking distance of every student, so the student had to be taken to the school. The disadvantages of this were more than offset by the provision of gymnasiums, organized sport, richer curriculum, medical examination, and immunization programs in larger centres.

Effie Bathurst⁸ said that many of the rural childhood tasks of the past, such as getting wood, pumping water, churning butter, were now gone. They had been replaced by "dangerous machinery and exacting scientific procedure." Farm children, therefore, not only needed more time devoted to education, but they also needed instruction in such subjects as home economics, industrial arts, business fundamentals, scientific farming. In all of these, the larger and more specialized school was better able to give the training required.

⁶Asael C. Lambert, School Transportation (Stanford University: Stanford University Press, 1938), p. 3.

⁷Julian E. Butterworth, Howard A. Dawson, The Modern Rural School (New York: McGraw-Hill Book Co., 1952), p. 3.

⁸Effie G. Bathurst, Schools Count in Life (Bulletin No. 8, Federal Security Agency, Office of Education, 1947)

M. C. S. Noble⁹ listed many advantages of rural centralized schools. Some were:

- (1) The enrolments and average daily attendance tend to increase.
- (2) There is a reduction in truancy and tardiness.
- (3) Pupils are stimulated by larger social groups.
- (4) There is greater opportunity to develop leadership qualities.
- (5) The curriculum is broader.
- (6) The teachers are better qualified.
- (7) The school environment is more attractive.
- (8) There is increased opportunity for high school education.
- (9) The quality of high school education is vastly superior.
- (10) There is more supervision by principals.
- (11) The larger schools are better equipped.
- (12) The educational and social level of the community is raised.

While the above are advantages of larger rural centralized schools over one-room country schools, it might very well be possible that many of these factors are also the advantages of larger town schools over rural centralized schools.

In a recent article in The Alberta School Trustee, J. W. Chalmers stated:

...we continue to operate and open two-room elementary institutions, one or two-room high schools, or small combinations of both. Yet such schools are commonly inadequate in accommodation, defective in equipment, narrow in program offered, poorly staffed,

⁹M. C. S. Noble, Pupil Transportation in the United States (Scranton, Pa.: International Textbook Company, 1940), p. 46.

and generally unsatisfactory in every respect except proximity to the pupils' homes.¹⁰

Chalmers¹¹ further stated that a study of provincial examination results in grade nine for the term 1957-58 and a study of grade twelve examination results for the period 1953 to 1956 for schools of various sizes suggested that as far as secondary education at least was concerned, the small schools were inefficient. He listed several tables comparing the examination results of schools of various sizes. One table is shown below:

TABLE I

ALBERTA GRADE NINE RESULTS, 1957-58¹²

<u>Size of Grade IX Class</u>	<u>Enrolments</u>	<u>Failures</u>	<u>%-age of Failures</u>
1-15 students	1,244	245	\$19.69
16-30 students	2,627	416	15.83
31 or more students	4,608	518	11.25
City schools	<u>6,737</u>	<u>562</u>	<u>8.34</u>
	15,214	1,741	11.41

D. B. Black, in a study of the final marks that teachers give to students in grade ten and eleven as compared to the marks that these students receive in grade twelve

¹⁰J. W. Chalmers, "School Grants in Alberta", The Alberta School Trustee, December 1959, p. 21.

¹¹Ibid.

¹²Taken from Table 3, The Alberta School Trustee, Edmonton, Alberta, December 1959, p. 24.

departmental examinations, revealed an almost uniformly higher rating of students by teachers in the smaller schools.

He stated:

...It hardly seems fair to students to be lulled into complacency in grades ten and eleven only to face a "rude awakening" upon receipt of their grade twelve departmental marks.¹³

Black¹⁴ went on to say that while small high schools generally tended to "over-rate" their students, not all small schools did so.

J. H. M. Andrews, in research undertaken at the University of British Columbia, sought answers to the following question: "Is the achievement of the secondary school pupils who are transported to the consolidated school superior to, inferior to, or the same as that of equivalent pupils who attend small rural high schools?"¹⁵

Andrews' study included all secondary pupils in School District Number 20 (Salmon Arm), British Columbia. Four schools were represented, three of them were small rural high schools and the fourth was a consolidated school. The

¹³D. B. Black, "Final Marks in Alberta Senior High Schools", The Alberta Journal of Educational Research, September 1960, Vol. 6, No. 3, p. 150.

¹⁴J. H. M. Andrews, "The Effect of Secondary Consolidation Upon Achievement in Fundamentals and Unit Cost" (unpublished Master's thesis, the University of British Columbia, Vancouver, 1954), p. 35.

students from these schools were matched with respect to mean and standard deviation of intelligence and were controlled in mean socio-economic status and percentage grade composition. The device used to measure pupil achievement was the Progressive Achievement Battery.¹⁵ He found that although the mean achievement of the transported consolidated group was 51.10 compared to 47.75 for the rural group, there was no significant difference in achievement at the .01 level.¹⁶

In a survey of the literature pertinent to his, as well as to this, study, Andrews summarized that:

...Studies relating the two factors "size of school" and "general quality of education" are reported to favour the large school overwhelmingly. When "size of school" and actual "achievement" are related, however, the result is found to be varied with approximately half the studies favouring the large school and the other half finding no significant difference. It is noted that most of the latter studies are more closely controlled than the former.¹⁷

¹⁵Ibid., p. 37.

¹⁶Ibid., p. 67.

¹⁷Ibid., p. 2.

CHAPTER III

GRADE NINE RESULTS

1. SAMPLE

As stated previously in Chapter I, in order to keep the two populations as nearly alike as possible, only farm students were considered. The number of farm students in grade nine for the years 1957 to 1959 were as follows:

TABLE II

GRADE NINE STUDENTS INVOLVED IN THE STUDY

		<u>1957</u>	<u>1958</u>	<u>1959</u>
The number of grade nine	(1) Crestomere	18	27	17
students at the three	(2) Mecca Glen	15	19	21
centralized schools	(3) Sylvan Heights	6	7	9
The number of farm students who				
attended grade nine at the Ponoka				
Junior High School		15	34	35

2. TREATMENT OF DATA

Records at the Ponoka County Office supplied the departmental examination results for all the grade nine students involved in this study. These results, it was felt, were better suited to the nonparametric rather than to parametric statistical analysis, since stanine scores are measurements in an ordinal scale and also since there was

some uncertainty about the parameters of the populations.

First a comparison was made among the three rural centralized schools using chi-square to test for overall significance. If there was no significant difference among the rural centralized schools with regard to a particular subject, performance in this subject was summed for the three schools and a comparison was made between the centralized schools and the Ponoka school.

If, when comparing the rural centralized schools, the chi-square for any subject was significant, the next step was to compare individual schools in pairs to determine whether any of these rural schools was markedly superior or inferior to the others. Then each rural school was taken separately and its performance was compared with that of the Ponoka school.

When comparing examination results between the Ponoka school and the centralized schools, eight stanine classifications were used. However, when comparing results among the three centralized schools, some of the expected frequencies were small and, as suggested by Guildford¹, adjacent classifications were combined to reduce the number of cells thereby increasing the expected frequencies in the various cells.

¹J. P. Guildford, Fundamental Statistics in Psychology and Education, New York, McGraw-Hill Book Co. Inc., 1956, p. 235.

3. DETERMINATION OF THE SIGNIFICANCE OF THE DIFFERENCE IN MEANS BETWEEN THE TWO GRADE NINE GROUPS

Grade Nine Mathematics

Null Hypothesis. H_0 : there is no significant difference among the Crestomere, Mecca Glen, and Sylvan Heights schools with respect to grade nine departmental mathematics examination results in 1957. H_1 : the three centralized schools differ with respect to grade nine mathematics results in 1957.

TABLE III

FREQUENCIES OF STANINE SCORES IN GRADE NINE
MATHEMATICS FOR THE THREE CENTRALIZED
SCHOOLS IN 1957

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	11 (8.3)	0 (2.3)	7 (7.3)	18
Mecca Glen	4 (6.8)	4 (1.8)	7 (6.1)	15
Sylvan Heights	3 (2.7)	1 (.76)	2 (2.4)	6
Total	18	5	16	39

$$\chi^2 = 7.16$$

The probability for the observed value of χ^2 , with $df = 4$, is between .20 and .10. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental mathematics examination results in the year 1958.

H_1 : the three centralized schools differ with respect to grade nine departmental examination results for mathematics in the year 1958.

TABLE IV

FREQUENCIES OF STANINE SCORES IN GRADE NINE
MATHEMATICS FOR THE THREE CENTRALIZED
SCHOOLS IN 1958

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	17 (11.7)	4 (6.1)	6 (9.1)	27
Mecca Glen	4 (8.2)	6 (4.5)	9 (6.4)	19
Sylvan Heights	2 (3.0)	2 (1.6)	3 (2.3)	7
Total	23	12	18	53

$$\chi^2 = 8.51$$

The probability for the observed value of χ^2 , with $df = 4$, is between .10 and .05. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental mathematics examination results in the year 1959. H_1 : the three centralized schools differ with respect to grade nine departmental results for mathematics in the year 1959.

TABLE V

FREQUENCIES OF STANINE SCORES IN GRADE NINE
MATHEMATICS FOR THE THREE CENTRALIZED
SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	5 (5.4)	7 (5.4)	5 (6.1)	17
Mecca Glen	5 (6.7)	7 (6.7)	9 (7.6)	21
Sylvan Heights	5 (2.8)	1 (2.8)	3 (3.2)	9
Total	15	15	17	47

$$x^2 = 4.49$$

The probability for the observed value of x^2 , with $df = 4$, is between .50 and .30. Since this probability is larger than .05, H_0 may not be rejected.

Since there was no significant difference in examination results for mathematics among the rural centralized schools, performance in mathematics for 1957-59 was summed and a comparison of performance was made between the rural centralized schools and the Ponoka school.

Null Hypothesis. H_0 : there is no significant difference in grade nine mathematics results for the years 1957, 1958, and 1959 between the Ponoka school and the centralized schools. H_1 : the Ponoka school and the centralized schools differ with respect to grade nine mathematics results for the years 1957, 1958, and 1959.

TABLE VI

FREQUENCIES OF STANINE SCORES IN GRADE NINE
MATHEMATICS FOR THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS IN 1957, 1958, and 1959

School	Stanine Classes								Total
	9	8	7	6	5	4	3	2,1	
Ponoka	7(4.1)	12(9.0)	19(14.3)	12(12.4)	15(17.7)	9(13.9)	5(8.2)	5(4.1)	84
Central- ized	4(6.8)	12(10.4)	19(23.7)	21(20.5)	32(29.2)	28(23.0)	17(18.6)	6(6.8)	139

$$\chi^2 = 12.04$$

The probability for the observed value of χ^2 , with $df = 7$, is between .10 and .05. Since this probability is larger than .05, H_0 may not be rejected.

Grade Nine Science

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental science examination results in the year 1957. H_1 : the three centralized schools differ with respect to grade nine departmental science examination results in the year 1957.

TABLE VII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SCIENCE FOR THE THREE CENTRALIZED
SCHOOLS IN 1957

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	6(6.9)	5(3.6)	7(7.3)	18
Mecca Glen	5(5.7)	2(3.0)	8(6.1)	15
Sylvan Heights	4(2.3)	1(1.2)	1(2.4)	6
Total	15	8	16	39

$$x^2 = 3.75$$

The probability for the observed value of x^2 , with $df = 4$, is between .30 and .50. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental science examination results in the year 1958. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for science in the year 1958.

TABLE VIII
FREQUENCIES OF STANINE SCORES IN GRADE NINE
SCIENCE FOR THE THREE CENTRALIZED
SCHOOLS IN 1958

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	19 (15.2)	4 (5.6)	4 (4.2)	27
Mecca Glen	8 (10.7)	6 (3.9)	5 (4.3)	19
Sylvan Heights	3 (3.9)	1 (1.4)	3 (1.5)	7
Total	30	11	12	53

$$x^2 = 5.04$$

The probability for the observed value of x^2 , with $df = 4$, is between .30 and .20. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental science examination results in the year 1959. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for science in the year 1959.

TABLE IX

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SCIENCE FOR THE THREE CENTRALIZED
SCHOOLS IN 1959

School	Stanine Classes				Total
	9,8,7	6	5	4,3,2,1	
Crestomere	2(3.04)	2(2.8)	3(5.4)	10(5.4)	17
Mecca Glen	6(4.02)	4(3.5)	9(6.7)	2(6.7)	21
Sylvan Heights	1(1.7)	2(1.5)	3(2.8)	3(2.8)	9
Total	9	8	15	15	47

$$\chi^2 = 11.39$$

The probability for the observed value of χ^2 , with $df = 6$, is between .10 and .05. Since this probability is larger than .05, H_0 may not be rejected.

Since there was no significant difference in examination results for science among the rural centralized schools, performance in science for 1957-59 was summed and a comparison of performance was made between the rural centralized schools and the Ponoka school.

Null Hypothesis. H_0 : there is no significant difference in grade nine science results for the years 1957, 1958, and 1959 between the Ponoka school and the centralized schools. H_1 : the Ponoka school and the centralized schools differ with respect to grade nine results for science in the years 1957, 1958, and 1959.

TABLE X

FREQUENCIES OF STANINE SCORES IN GRADE NINE SCIENCE
FOR THE PONOKA SCHOOL AND THE CENTRALIZED SCHOOLS
IN 1957, 1958, and 1959

School	Stanine Classes								Total
	9	8	7	6	5	4	3	2,1	
Ponoka	7(4.1)	12(8.6)	16(13.9)	16(15.8)	16(18.9)	9(12.0)	4(6.4)	4(4.1)	84
Centralized	4(6.8)	11(14.3)	21(23.0)	26(26.1)	34(31.1)	23(19.9)	13(10.5)	7(6.8)	139
Total	11	23	37	42	50	32	17	11	223

$$\chi^2 = 9.18$$

The probability for the observed value of χ^2 , with $df = 7$, is between .30 and .20. Since this probability is larger than .05, H_0 may not be rejected.

Grade Nine Language

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental language examination results in the year 1957. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for language in the year 1957.

TABLE XI

FREQUENCIES OF STANINE SCORES IN GRADE NINE
LANGUAGE FOR THE THREE CENTRALIZED
SCHOOLS IN 1957

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	10(8.7)	5(3.2)	3(6.0)	18
Mecca Glen	5(7.4)	2(2.6)	8(5.0)	15
Sylvan Heights	4(2.9)	0(1.1)	2(2.0)	6
Total	19	7	13	39

$$x^2 = 6.94$$

The probability for the observed value of x^2 , with $df = 4$, is between .20 and .10. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, Sylvan Heights schools with respect to grade nine departmental language examination results in the year 1958. H_1 : the three centralized schools differ with respect to grade nine departmental examinations results for language in the year 1958.

TABLE XII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
LANGUAGE FOR THE THREE CENTRALIZED
SCHOOLS IN 1958

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	9(7.6)	10(6.7)	8(10.7)	27
Mecca Glen	5(5.3)	6(6.1)	8(7.5)	19
Sylvan Heights	1(1.9)	1(2.2)	5(2.7)	7
Total	15	17	21	53

$$x^2 = 5.34$$

The probability for the observed value of x^2 , with $df = 4$, is between .30 and .20. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental language examination results in the year 1959. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for language in the year 1959.

TABLE XIII
FREQUENCIES OF STANINE SCORES IN GRADE NINE
LANGUAGE FOR THE THREE CENTRALIZED
SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	3(5.7)	5(6.1)	9(5.0)	17
Mecca Glen	9(7.1)	10(7.5)	2(6.3)	21
Sylvan Heights	4(3.0)	2(3.2)	3(2.6)	9
Total	16	17	14	47

$$x^2 = 8.73$$

The probability for the observed value of x^2 , with $df = 4$, is between .10 and .05. Since this probability is larger than .05, H_0 may not be rejected.

Since there was no significant difference in examination results for language among the rural centralized schools, performance in language for 1957-59 was summed and a comparison of performance was made between the rural centralized schools and the Ponoka School.

Null Hypothesis. H_0 : there is no significant difference in grade nine language results for the years 1957, 1958, and 1959 between the Ponoka school and the centralized schools. H_1 : the Ponoka school and the centralized schools differ with respect to grade nine language results in the years 1957, 1958, and 1959.

TABLE XIV

FREQUENCIES OF STANINE SCORES IN GRADE NINE
LANGUAGE FOR THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS IN 1957,
1958, and 1959

School	Stanine Classes								Total
	9	8	7	6	5	4	3	2,1	
Ponoka	3(2.6)	8(8.6)	14(9.0)	14(13.1)	20(22.9)	12(12.4)	8(10.1)	5(4.8)	84
Central- ized	4(4.3)	15(14.3)	10(10.4)	21(21.8)	41(38.0)	21(20.5)	19(16.8)	8(8.1)	139
Total	7	23	24	35	61	33	27	13	223

$$\chi^2 = 4.40$$

The probability for the observed value of χ^2 , with $df = 8$, is between .90 and .80. Since this probability is larger than .05, H_0 may not be rejected.

Grade Nine Literature

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental literature examination results in the year 1957.

H_1 : the three centralized schools differ with respect to grade nine departmental examination results for literature in the year 1957.

TABLE XV

FREQUENCIES OF STANINE SCORES IN GRADE NINE
LITERATURE FOR THE THREE CENTRALIZED
SCHOOLS IN 1957

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	6(6.1)	4(3.7)	8(8.0)	18
Mecca Glen	4(4.7)	3(2.9)	7(6.2)	14
Sylvan Heights	3(2.0)	1(1.2)	2(2.6)	6
Total	13	8	17	38

$$\chi^2 = 1.26$$

The probability for the observed value of χ^2 , with $df = 4$, is between .90 and .80. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental literature examination results in the year 1958.

H_1 : the three centralized schools differ with respect to grade nine departmental examination results for literature in the year 1958.

TABLE XVI

FREQUENCIES OF STANINE SCORES IN GRADE NINE
LITERATURE FOR THE THREE CENTRALIZED
SCHOOLS IN 1958

School	Stanine Scores			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	8(7.1)	7(7.1)	12(12.7)	27
Mecca Glen	5(5.0)	5(5.0)	8(8.8)	19
Sylvan Heights	1(1.8)	2(1.8)	4(3.3)	7
Total	14	14	25	53

$$x^2 = .71$$

The probability for the observed value of x^2 , with $df = 4$, is .95. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental literature examination results in the year 1959. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for literature in the year 1959.

TABLE XVII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
LITERATURE FOR THE THREE CENTRALIZED
SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	5(5.7)	4(5.4)	8(5.7)	17
Mecca Glen	5(7.1)	9(6.7)	7(7.1)	21
Sylvan Heights	6(3.1)	2(2.8)	1(3.1)	9
Total	16	15	16	47

$$\chi^2 = 7.09$$

The probability for the observed value of χ^2 , with $df = 4$, is between .20 and .10. Since this probability is larger than .05, H_0 may not be rejected.

Since there was no significant difference in examination results for literature among the rural centralized schools, performance in literature for 1957-59 was summed and a comparison of performance was made between the rural centralized schools and the Ponoka school.

Null Hypothesis. H_0 : there is no significant difference in grade nine literature results for the three years 1957, 1958, and 1959 between the Ponoka school and the centralized schools. H_1 : the Ponoka school and the centralized schools differ with respect to grade nine literature results in the years 1957, 1958, and 1959.

TABLE XVIII

FREQUENCIES OF STANINE SCORES IN GRADE NINE LITERATURE
FOR THE PONOKA SCHOOL AND THE CENTRALIZED
SCHOOLS IN 1957, 1958, and 1959

School	Stanine Classes								Total
	2	8	7	6	5	4	3	2,1	
Ponoka	2(1.8)	12(6.4)	14(9.7)	14(13.9)	17(20.3)	11(15.0)	11(11.3)	3(5.2)	84
Central- ized	3(3.1)	5(10.5)	12(16.2)	23(23.0)	37(33.6)	29(24.9)	19(18.7)	11(8.7)	139
Total	5	17	26	37	54	40	30	14	223

$$\chi^2 = 15.95$$

The probability for the observed value of χ^2 , with $df = 8$, is between .05 and .02. Since this probability is less than .05, the decision is to reject H_0 and to conclude that on the basis of these data the two schools differ with respect to grade nine literature results in 1957, 1958, and 1959.

Grade Nine Social Studies

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine Social Studies departmental examination results in the year 1957.

H_1 : the three centralized schools differ with respect to grade nine departmental results for social studies in the year 1957.

TABLE XIX

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE THREE CENTRALIZED
SCHOOLS IN 1957

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	6(6.0)	3(2.7)	9(9.2)	18
Mecca Glen	4(5.0)	2(2.3)	9(7.7)	15
Sylvan Heights	3(2.0)	2(.92)	2(3.1)	6
Total	13	6	20	39

$$\chi^2 = 1.4$$

The probability for the observed value of χ^2 , with $df = 4$, is between .90 and .80. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine social studies examination results in the year 1958. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for social studies in the year 1958.

TABLE XX

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE THREE CENTRALIZED
SCHOOLS IN 1958

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	12(10.7)	8(6.6)	7(9.6)	27
Mecca Glen	8(7.5)	4(4.6)	7(6.8)	19
Sylvan Heights	1(2.7)	1(1.7)	5(2.5)	7
Total	21	13	19	53

$$x^2 = 5.65$$

The probability for the observed value of x^2 , with $df = 4$, is between .30 and .20. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference among the Mecca Glen, Crestomere, and Sylvan Heights schools with respect to grade nine departmental social studies examinations results in the year 1959. H_1 : the three centralized schools differ with respect to grade nine departmental examination results for social studies for the year 1959.

TABLE XXI

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE THREE CENTRALIZED
SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	4(8.3)	3(3.6)	10(5.0)	17
Mecca Glen	17(10.2)	4(4.4)	0(6.2)	21
Sylvan Heights	2(4.4)	3(1.9)	4(2.6)	9
Total	23	10	14	47

$$\chi^2 = 20.61$$

The probability for the observed value of χ^2 , with $df = 4$, is beyond .001. Since this probability is less than .05, the decision is to reject H_0 , and to conclude on the basis of these data that the three centralized schools differ with respect to grade nine departmental examination results for social studies in the year 1959.

Since there was a significant difference in social studies results for 1959 among the rural centralized schools, pair comparisons were made among the schools to determine the origin of this difference. Then each rural school was taken separately and its performance was compared with that of the Ponoka school.

Null Hypothesis. H_0 : there is no significant difference between the Mecca Glen and Sylvan Heights schools with respect to grade nine departmental social studies examination results in the year 1959. H_1 : the Mecca Glen and Sylvan Heights schools differ with respect to grade nine results for social studies in the year 1959.

TABLE XXII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE MECCA GLEN AND
SYLVAN HEIGHTS SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Mecca Glen	17(13.3)	4(4.9)	0(2.8)	21
Sylvan Heights	2(5.7)	3(2.1)	4(1.2)	9
Total	19	7	4	30

$$x^2 = 13.29$$

The probability for the observed value of x^2 , with $df = 2$, is between .01 and .001. Since this probability is less than .05, the decision is to reject H_0 and to conclude on the basis of these data that Mecca Glen and Sylvan Heights schools differ with respect to grade nine results for social studies in the year 1959.

Null Hypothesis. H_0 : there is no significant difference between the Mecca Glen and Crestomere schools with respect to grade nine departmental social studies examination results in the year 1959. H_1 : the Mecca Glen and Crestomere schools differ with respect to grade nine results for social studies in the year 1959.

TABLE XXIII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE MECCA GLEN AND
CRESTOMERE SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Mecca Glen	17(11.6)	4(3.8)	0(5.5)	21
Crestomere	4(9.3)	3(3.1)	10(4.4)	17
Total	21	7	10	38

$$x^2 = 18.16$$

The probability for the observed value of x^2 , with $df = 2$, is less than .001. Since this probability is less than .05, the decision is to reject H_0 and to conclude on the basis of these data that Mecca Glen and Crestomere differ with respect to grade nine results for social studies in the year 1959.

Null Hypothesis. H_0 : there is no significant difference between the Crestomere and Sylvan Heights schools with respect to grade nine departmental social studies examination results in the year 1959. H_1 : the Crestomere and Sylvan Heights schools differ with respect to grade nine results for social studies in the year 1959.

TABLE XXIV

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE CRESTOMERE AND
SYLVAN HEIGHTS SCHOOLS IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Crestomere	4(3.9)	3(3.9)	10(9.1)	17
Sylvan Heights	2(2.0)	3(2.0)	4(4.8)	9
Total	6	6	14	26

$$\chi^2 = .91$$

The probability for the observed value of χ^2 , with $df = 2$, is between .70 and .50. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the Sylvan Heights school with respect to grade nine departmental social studies examination results in the year 1959. H_1 : the Ponoka school and the Sylvan Heights school differ with respect to grade nine results for social studies in the year 1959.

TABLE XXV

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE PONOKA SCHOOL AND
THE SYLVAN HEIGHTS SCHOOL IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Ponoka	19(16.7)	6(7.1)	10(11.1)	35
Sylvan Heights	2(4.2)	3(1.7)	4(2.8)	9
Total	21	9	14	44

$$\chi^2 = 3.23$$

The probability for the observed value of χ^2 , with $df = 2$, is between .20 and .10. Since this probability is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the Crestomere school with respect to grade nine departmental social studies examination results in the year 1959. H_1 : the Ponoka school and the Crestomere school differ with respect to grade nine results for social studies in the year 1959.

TABLE XXVI

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE PONOKA SCHOOL AND
THE CRESTOMERE SCHOOL IN 1959

School	Stanine Classes			Total
	9,8,7,6	5	4,3,2,1	
Ponoka	19(15.4)	6(6.0)	10(13.4)	35
Crestomere	4(7.5)	3(2.9)	10(6.5)	17
Total	23	9	20	52

$$\chi^2 = 3.74$$

The probability for the observed value of χ^2 , with $df = 2$, is between .20 and .10. Since this value is larger than .05, H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and Mecca Glen school with respect to grade nine departmental social studies examination results in the year 1959. H_1 : the Ponoka school and the Mecca Glen school differ with respect to grade nine results for social studies for the year 1959.

TABLE XXVII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE PONOKA SCHOOL AND
THE MECCA GLEN SCHOOL IN 1959

School	Stanine Classes			Total
Mecca Glen	17(13.5)	4(3.7)	0(3.7)	21
Ponoka	19(22.5)	6(6.2)	10(6.2)	35
Total	36	10	10	56

$$\chi^2 = 7.48$$

The probability for the observed value of χ^2 , with $df = 2$, is between .05 and .02. Since this value is less than .05, the decision is to reject H_0 and to conclude on the basis of these data that Mecca Glen and Ponoka differ with respect to grade nine social studies results in the year 1959.

Since there was no significant difference in examination results for social studies in 1957 and 1958 among the rural centralized schools, performance in social studies for 1957 and 1958 was summed and a comparison of performance was made between the rural centralized schools and the Ponoka school.

Null Hypothesis. H_0 : there is no significant difference in grade nine social studies results for the years 1957 and 1958 between the Ponoka school and the centralized schools. H_1 : the Ponoka school and the centralized schools differ with respect to grade nine social studies results in the years 1957 and 1958.

TABLE XXVIII

FREQUENCIES OF STANINE SCORES IN GRADE NINE
SOCIAL STUDIES FOR THE PONOKA SCHOOL AND
THE CENTRALIZED SCHOOLS IN 1957 and 1958

School	Stanine Classes								Total
	9	8	7	6	5	4	3	2,1	
Ponoka	1(2.4)	4(3.1)	9(5.9)	10(8.6)	11(10.4)	5(9.3)	8(6.6)	1(2.4)	49
Central- ized	6(4.5)	5(5.8)	8(11.0)	15(16.3)	19(19.5)	22(17.6)	11(12.3)	6(4.5)	92
Total	7	9	17	25	30	27	19	7	141

$$\chi^2 = 9.56$$

The probability for the observed value of χ^2 , with $df = 7$, is between .30 and .20. Since this value is larger than .05, H_0 may not be rejected.

3. DISCUSSION OF GRADE NINE RESULTS

To review briefly, a comparison of the examination results of the three rural centralized schools was made in each examination subject. This was done for the three years 1957, 1958, and 1959. If there was no significant difference, then performance for that subject was summed for the rural schools and a comparison was made with the Ponoka school.

No significant differences were found between the Ponoka school and the rural centralized schools with respect to examination results in mathematics, science, and language. However, a significant difference was found between the Ponoka school and the rural centralized schools with respect to examination results in literature.

A comparison of the 1959 social studies results of the rural centralized schools revealed a significant difference. The individual rural schools were therefore compared in pairs to determine whether any of these schools was markedly superior or inferior to the others. Each rural school was then taken separately and its performance was compared with that of the Ponoka school. In each case, the Mecca Glen school proved to have superior results to the other schools.

In summary, then, for the years 1957 to 1959 inclus-

ive, there was very little difference in grade nine examination results between the Ponoka school and the rural centralized schools. Just two differences occurred. Ponoka had better results in literature for the period 1957 to 1959 than did the rural centralized schools. In 1959, Mecca Glen had better results in social studies than either the Ponoka school or the other two centralized schools.

Why Ponoka grade nine students did somewhat better in just one subject is rather difficult to explain. It is equally difficult to explain why Mecca Glen school had better social studies results in 1959 than did the other schools. Whatever may be the reasons for these two differences, no conclusive evidence exists to account for them.

CHAPTER IV

GRADE TWELVE RESULTS

1. SAMPLE

In grade nine, in order to keep the two populations as alike as possible, only farm students were considered. This same procedure was followed with the grade twelve students. The numbers of farm students in grade twelve for the years 1957, 1958, and 1959 were as follows:

TABLE XXIX

GRADE TWELVE STUDENTS INVOLVED IN THE STUDY

		<u>1957</u>	<u>1958</u>	<u>1959</u>
The number of farm students from the three centralized schools who took their grade twelve at the Ponoka school	(1) Crestomere	1	5	5
	(2) Mecca Glen	4	7	8
	(3) Sylvan	0	1	2
	Heights			
The number of Ponoka farm students who took their grade twelve at the Ponoka school		12	18	15

2. TREATMENT OF DATA

Records at the Ponoka County Office supplied the departmental examination results for the following academic subjects: (1) English 30, (2) Social Studies 30,

(3) Mathematics 30, (4) Chemistry 30, (5) Biology 32, (6) Physics 30, (7) French 30. Latin 30 was not included because Latin 20 was not taught at any of the rural centralized schools and therefore no rural centralized school pupils took Latin 30 at the Ponoka School.

The results for each examination subject for each year were then compiled into frequency distributions; the mean was calculated; and the significance of the difference in means between the two grade twelve groups was determined. In subjects where the frequencies were quite small it was necessary to combine the results for two and even for three years before a comparison could be made.

3. DETERMINATION OF THE SIGNIFICANCE OF THE DIFFERENCE IN MEANS BETWEEN THE TWO GRADE TWELVE GROUPS

Grade Twelve English

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized school with respect to grade twelve results in English for 1957.
 H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in English for 1957.

TABLE XXX

GRADE TWELVE RESULTS IN ENGLISH FOR
1957 IN THE PONOKA SCHOOL AND
THE CENTRALIZED SCHOOLS

X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
55	68	3025	4624
68	71	4624	5041
93	76	8649	5776
42	65	1764	4225
63	79	3969	6241
78		6084	
73		5329	
67		4489	
46		2116	
78		6084	
Totals 663	359	46133	25907
$N = 10$	5		
$\bar{X} = 66.3$	71.8		
$\sum x^2 = 2176.1$	130.8		

A. F-Test

$$F = 7.39$$

F entries of 6.00 and 14.66 are significant at the 5 and 1 per cent values. The calculated F of 7.39 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \quad SD_{\bar{X}} = 5.54$$

$$(b) \quad t = .99$$

$$(c) \quad \text{Criterion } t^1 = 2.37$$

Since the obtained value of t , .99, is less than 2.37, it may be concluded that there is no significant difference between the means, and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in English for 1958. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in English for 1958.

TABLE XXXI

GRADE TWELVE RESULTS IN ENGLISH FOR 1958
IN THE PONOKA SCHOOL AND IN
THE CENTRALIZED SCHOOLS

X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
59	72	3481	5184
63	74	3969	5476
59	42	3481	1764
63	55	3969	3025
36	56	1296	3136
63	69	3969	4761
52	79	2704	6241
70	47	4900	2209
67	90	4489	8100
74	50	5446	2500
84	58	7056	3364
69	47	4761	2209
64		4096	
50		2500	
47		2209	
Totals	920	58356	47969

$$\begin{array}{rcl} N & = & 15 \qquad \qquad 12 \\ \bar{X} & = & 61.33 \qquad \qquad 61.58 \end{array}$$

$$\sum x^2 = 1929.33 \qquad 2458.92$$

A. F. Test

$$F = 1.62$$

F entries of 2.56 and 3.86 are significant at the .10 and .02 levels respectively. The calculated F of 1.62 is not significant at either of these levels.

B. Pooled Variances

$$SD_{\bar{X}} = 5.13$$

C. T-Test

$$t = .05$$

A t of 2.060 is significant at the .05 level and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in English for 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in English for 1959.

TABLE XXXII

GRADE TWELVE RESULTS IN ENGLISH FOR 1959
IN THE PONOKA SCHOOL AND IN
THE CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	62	64	3844	4096
	71	59	5041	3481
	79	75	6241	5625
	56	61	3136	3721
	47	25	2116	625
	71	43	5041	1849
	64	71	4096	5041
	62	78	3844	6084
	64	53	4096	2809
	61	50	3721	3721
	80	41	6400	1681
	47	71	2209	5041
	58	41	3364	1681
		50		2500
		53		2809
Totals	822	835	53149	50764
N =	13	15		
$\bar{X}$ =	63.23	55.67		
$\sum X^2 =$	1173.31	4282.33		

A. F-Test

$$F = 3.12$$

F entries of 2.64 and 4.29 are significant at the .10 and .02 levels respectively. The calculated F of 3.12 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \text{ SD}_{\bar{x}} = 5.28$$

$$(b) t = 1.43$$

$$(c) \text{ Criterion } t^1 = 2.12$$

Since the obtained value of t , 1.43, is less than 2.12, it may be concluded that there is no significant difference between the means and thus H_0 may not be rejected.

Grade Twelve Social Studies

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized school with respect to grade twelve results in social studies for 1957. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in social studies for 1957.

TABLE XXXIII

GRADE TWELVE RESULTS IN SOCIAL STUDIES FOR
1957 IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	63	67	3969	4489
	57	81	3249	6561
	75	64	5625	4096
	53	52	2809	2704
	57		3249	
	87		7569	
	65		4225	
	82		6724	
	65		4225	
	64		4096	
	56		3136	
Totals	724	264	48876	17850
N=	11	4		
$\bar{X}$ =	65.82	66.0		
$\sum x^2$ =	1223.64	426		

A. F-Test

$$F = 1.16$$

F entries of 8.78 and 27.23 are significant at the .10 and .02 levels respectively.

The calculated F of 1.16 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 6.57$$

C. T-Test

$$t = .03$$

A t of 2.160 is significant at the .05 level and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in social studies for 1958. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in social studies for 1958.

TABLE XXXIV

GRADE TWELVE RESULTS IN SOCIAL STUDIES FOR
1958 IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	67	61	4489	3721
	66	70	4356	4900
	63	30	3969	900
	76	53	5776	2809
	59	56	3481	3136
	57	47	3249	2209
	33	64	1089	4096
	50	78	2500	6084
	69	45	4761	2025
	66	80	4356	6400
	65	64	4225	4096
	79	59	6241	3481
	65	45	4225	2025
	67		4489	
	57		3249	
	53		2809	
	40		1400	
	62		3844	
Totals	1094	752	68708	45882
$N =$	18	13		
$\bar{X} =$	60.78	57.85		
$\sum x^2 =$	2217.11	2381.69		

A. F-Test

$$F = 1.52$$

F entries of 2.41 and 3.52 are significant at the .10 and .02 levels respectively.

The calculated F of 1.52 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 4.05$$

C. t-Test

$$t = .72$$

A t of 2.021 is significant at the .05 level, and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in social studies for 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in social studies for 1959.

TABLE XXXV

GRADE TWELVE RESULTS IN SOCIAL STUDIES FOR
1959 IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	72	55	5041	3025
	61	43	3721	1849
	79	75	6241	5625
	46	70	2116	4900
	66	24	4356	576
	71	63	5041	3969
	69	78	4761	6084
	45	76	2025	5776
	53	77	2809	5929
	65	57	4225	3249
	61	37	3721	1369
	72	71	5184	5041
		40		1600
		46		2116
		50		2500
Totals	760	862	49241	53608
N =	12	15		
$\bar{X}$ =	63.33	57.47		
$\sum x^2$ =	1107.69	4071.73		

A. F-Test

$$F = 2.89$$

F entries of 2.74 and 4.29 are significant at the .10 and .02 levels respectively.

The calculated F of 2.89 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \text{ SD}_{\bar{x}} = 5.27$$

$$(b) \text{ } t = 1.11$$

$$(c) \text{ Criterion } t^1 = 2.16$$

Since the obtained value of t , 1.11, is less than 2.16, it may be concluded that there is no significant difference between the means and thus H_0 may not be rejected.

Grade Twelve Mathematics

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in mathematics for 1957. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in mathematics for 1957.

TABLE XXXVI

GRADE TWELVE RESULTS IN MATHEMATICS FOR 1957
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	31	73	961	5329
	65	40	4225	1600
	30	77	900	5929
	44	68	1936	4624
	75	54	5625	2916
	82		6724	
	40		1600	
	66		4356	
Totals	433	312	26327	20398
$N =$	8	5		
$\bar{X} =$	54.13	62.4		
$\sum x^2 =$	2855.87	929.20		

A. F-Test

$$F = 1.76$$

F entries of 6.09 and 14.98 are significant at the .10 and .02 levels respectively.

The calculated F of 1.76 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 10.57$$

C. t-Test

$$t = .78$$

A t of 2.201 is significant at the .05 level, and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in mathematics for 1958. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in mathematics for 1958.

TABLE XXXVII
GRADE TWELVE RESULTS IN MATHEMATICS FOR 1958
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	66	43	4356	1849
	59	42	3481	1764
	54	45	2916	2025
	60	43	3600	1849
	56	77	3136	5929
	58	55	3364	3025
	61	63	3721	3969
	66	40	4356	1600
	70	42	4900	1764
	32		1024	
	73		5329	
Totals	655	450	40183	23774
$N =$	11	9		
$\bar{X} =$	59.55	50.0		
$\sum x^2 =$	1180.73	1274		

A. F-Test

$$F = 1.35$$

F entries of 3.07 and 5.06 are significant at the .10 and .02 levels respectively.

The calculated F of 1.35 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 5.25$$

C. T-Test

$$t = 1.82$$

A t of 2.101 is significant at the .05 level and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized school with respect to grade twelve results in mathematics for 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in mathematics for 1959.

TABLE XXXVIII

GRADE TWELVE RESULTS IN MATHEMATICS FOR 1959
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
59	73	3481	5329
56	52	3136	2704
74	75	5476	5625
61	50	3721	2500
67	77	4489	5929
50	65	2500	4225
62	47	3844	2209
55	17	3025	196
	54		2916
	41		1681
	58		3364
Totals 484	606	29672	36678
$N = 8$	11		
$\bar{X} = 60.5$	55.09		
$\sum x^2 = 390$	3292.01		

A. F-Test

$$F = 5.91$$

F entries of 3.63 and 6.62 are significant at the .10 and .02 levels respectively.

The calculated F of 5.91 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \quad SD_{\bar{x}} = 6.07$$

$$(b) \quad t = .89$$

$$(c) \quad \text{Criterion } t^1 = 2.25$$

Since the obtained value of t, .89, is less than 2.25, it may be concluded that there is no significant difference between the means, and thus H_0 may not be rejected.

Grade Twelve Chemistry

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in chemistry for 1957. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in chemistry for 1957.

TABLE XXXIX

GRADE TWELVE RESULTS IN CHEMISTRY FOR 1957
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	46	60	2116	3600
	55	45	3025	2025
	67	76	4489	5776
	67	44	2025	1936
	45	44	3721	1936
	61		1936	
	44		3025	
	55			
Totals	440	269	24826	15273
$N =$	8	5		
$\bar{X} =$	55	53.8		
$\sum x^2 =$	626	800.8		

A. F-Test

$$F = 2.24$$

F. entries of 4.12 and 7.85 are significant at the .10 and .02 levels respectively.

The calculated F of 2.24 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 6.49$$

C. t-Test

$$t = .18$$

A t of 2.201 is significant at the .05 level, and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in chemistry for 1958. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in chemistry for 1958.

TABLE XL

GRADE TWELVE RESULTS IN CHEMISTRY FOR 1958
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	57	51	3249	2601
	41	41	1681	1681
	58	45	3364	2025
	56	28	3136	784
	46	43	2116	1849
	54	69	2916	4761
	51	60	2601	3600
	59	60	3481	2116
	60	46	3600	1600
	50	40	2500	
	58		3364	
	47		2209	
	45		2025	
Totals	682	483	36242	24617
$N =$	13	10		
$\bar{X} =$	52.46	48.3		
$\sum x^2 =$	463.23	1288.10		

A. F-Test

$$F = 3.71$$

F entries of 2.80 and 4.39 are significant at the .10 and .02 levels respectively.

The calculated F of 3.71 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \quad SD_{\bar{x}} = 4.16$$

$$(b) \quad t = 1.00$$

$$(c) \quad \text{Criterion } t^1 = 2.25$$

Since the obtained value of t , 1.00, is less than 2.25, it may be concluded that there is no significant difference between the means and thus H_0 may not be rejected.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in chemistry for 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in chemistry for 1959.

TABLE XLI

GRADE TWELVE RESULTS IN CHEMISTRY FOR 1959
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	65	43	4225	1849
	53	84	2809	7056
	79	62	6241	3844
	34	22	1156	484
	40	81	1600	6561
	63	79	3969	6241
	56	45	3136	2025
	60	44	3600	1936
	41	28	1681	784
	36	57	1296	3249
	66	20	4356	400
	66	33	4356	1089
	43	64	1849	4096
	55		3025	
Total	757	662	43299	39614
$N =$	14	13		
$\bar{X} =$	54.07	50.92		
$\sum x^2 =$	2366.93	5902.92		

A. F-Test

$$F = 2.70$$

F entries of 2.60 and 3.96 are significant at the .10 and .02 levels respectively.

The calculated F of 2.70 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \quad SD_{\bar{x}} = 7.13$$

$$(b) \quad t = .44$$

$$(c) \quad \text{Criterion } t^1 = 2.17$$

Since the obtained value of t, .44, is less than 2.17, it may be concluded that there is no significant difference between the means and thus H_0 may not be rejected.

Grade Twelve Physics

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in physics for the years 1957, 1958, and 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in physics for the years 1957, 1958, and 1959.

TABLE XLII

GRADE TWELVE RESULTS IN PHYSICS FOR 1957,
1958, and 1959 IN THE PONOKA SCHOOL AND
THE CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	59	72	3481	5184
	44	81	1936	6561
	44	62	1936	3844
	85	56	7225	3136
	80	81	6400	6561
	57	57	3249	3249
	51	47	2601	2209
	65	75	4225	5625
	46	52	2116	2704
	50	16	2500	256
	64		4096	
	66		4356	
	63		3969	
	57		3249	
	70		4900	
	68		4624	
	62		3844	
Totals	1031	599	64707	39329
$N =$	17	10		
$\bar{X} =$	60.65	59.90		
$\sum x^2 =$	2179.89	3448.90		

A. F-Test

$$F = 2.82$$

F entries of 2.54 and 3.78 are significant at the .10 and .02 levels respectively.

The calculated F of 2.82 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \quad SD_{\bar{x}} = 6.81$$

$$(b) \quad t = .11$$

$$(c) \quad \text{Criterion } t^1 = 2.24$$

Since the obtained value of t , .11, is less than 2.24, it may be concluded that there is no significant difference between the means and thus H_0 may not be rejected.

NOTE: There were so few students from the Ponoka school and the rural centralized schools who took Physics 30 that examination results for the three years had to be combined before a comparison could be made.

Grade Twelve Biology

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in biology for 1957 and 1958. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results for biology for 1957 and 1958.

TABLE XLIII

GRADE TWELVE RESULTS IN BIOLOGY FOR 1957
AND 1958 IN THE PONOKA SCHOOL
AND THE CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	60	71	3600	5041
	82	64	6724	4096
	63	71	3969	5041
	86	68	7396	4624
	35	53	1225	2809
	62	82	3844	6724
	62	59	3844	3481
	54	46	2916	2116
	73	73	5329	5329
	80	66	6400	4356
	85		7225	
	91		8281	
	65		4225	
	66		4356	
	67		4489	
	81		6561	
	73		5329	
	67		4489	
	67		4489	
Totals	1319	653	94690	43717
N =	19	10		
$\bar{X}$ =	69.42	65.30		
$\sum x^2$ =	3123.64	1076.10		

A. F-Test

$$F = 1.45$$

F entries of 2.96 and 4.86 are significant at the .10 and .02 levels respectively.

The calculated F of 1.62 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 4.87$$

C. t-Test

$$t = .85$$

A t of 2.052 is significant at the .05 level and thus H_0 may not be rejected.

NOTE: There were so few students from the rural centralized schools who took Biology 32 in 1957 and 1958 that examination results for the two years had to be combined before a comparison could be made.

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in biology for 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in biology for 1959.

TABLE LXIV

GRADE TWELVE RESULTS IN BIOLOGY FOR 1959
IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	79	57	6241	3249
	54	85	2916	7225
	72	90	5184	8100
	71	71	5041	5041
	83	61	6889	3721
	51	79	2601	6241
	62	46	3844	2116
	76	52	5776	2704
	91	70	8281	4900
	68		4624	
Totals	707	611	51397	43297
N =	10	9		
$\bar{X}$ =	70.70	67.88		
$\sum x^2$ =	1412.10	1816.89		

A. F-Test

$$F = 1.45$$

F entries of 3.23 and 5.47 are significant at the .10 and .02 levels respectively.

The calculated F of 1.45 is not significant at either of these levels.

B. Pooled Variance

$$SD_{\bar{x}} = 6.33$$

C. t-Test

$$t = .45$$

A t of 2.110 is significant at the .05 level, and thus H_0 may not be rejected.

Grade Twelve French

Null Hypothesis. H_0 : there is no significant difference between the Ponoka school and the centralized schools with respect to grade twelve results in French for 1957, 1958, and 1959. H_1 : the Ponoka school and the centralized schools differ with respect to grade twelve results in French for 1957, 1958, and 1959.

TABLE XLV

GRADE TWELVE RESULTS IN FRENCH FOR 1957,
1958, and 1959 IN THE PONOKA SCHOOL
AND THE CENTRALIZED SCHOOLS

	X_1 (Ponoka)	X_2 (Centralized)	X_1^2	X_2^2
	76	64	5776	4096
	84	70	7056	4900
	80	83	6400	6889
	88	70	7744	4900
	75	95	5625	9025
	73	94	5329	8836
	64	60	4096	3600
	78	45	6084	2025
	85	72	7225	5184
		88		7744
		57		3249
		45		2025
		85		7225
		70		4900
		55		3025
		76		5776
		88		7744
		78		6084
Totals	703	1295	55335	97227
$N =$	9	18		
$\bar{X} =$	78.11	71.94		
$\sum x^2 =$	422.89	4058.05		

A. F-Test

$$F = 4.52$$

F entries of 3.20 and 5.45 are significant at the .10 and .02 levels respectively.

The calculated F of 4.52 is significant at the .10 level.

B. Cochran and Cox Test

$$(a) \quad SD_{\bar{X}} = 4.38$$

$$(b) \quad t = 1.40$$

$$(c) \quad \text{Criterion } t^1 = 2.10$$

Since the obtained value of t , 1.40, is less than 2.00, it may be concluded that there is no significant difference between the means, and thus H_0 may not be rejected.

NOTE: There were so few students from both the Ponoka school and the rural centralized schools who took French 30 that examination results for the three years had to be combined before a comparison could be made.

4. DISCUSSION OF GRADE TWELVE RESULTS

To review briefly, the number of students from each rural centralized school who attended the Ponoka school was quite small, and as a result it was not possible to compare separately the examination results of the students from each of these schools with the results of the farm students from the Ponoka school. Therefore, examination results of the students from the centralized schools were combined in each year and were then compared with the examination results of the farm students from the Ponoka school.

In Physics 30 and in French 30 the numbers were so small that it was necessary to combine results for the three years and in Biology 32 the results for two years were combined.

The comparisons revealed that seventy-five per cent of the Ponoka school means were greater than the means of the rural centralized schools. However, the differences in means were not very large.

The largest difference in means in favour of the Ponoka school was for mathematics results in 1958 when the Ponoka school had a mean of 59.55 as against the centralized schools' mean of 50.0. However, in 1957, the situation was reversed. That year the centralized schools had a

mathematics mean of 62.4 and the Ponoka school had a mean of 54.13.

The smallest mean difference in examination results, between the two schools, was for English in 1958. In that year the Ponoka school had a mean of 61.3 while the centralized schools had a mean of 61.58.

All the differences in means were statistically nonsignificant and the conclusion is that there is no consistent evidence of superiority in grade twelve examination results on the part of either the Ponoka school or the rural centralized schools.

CHAPTER V

STUDENT QUESTIONNAIRE RESULTS

1. QUESTIONNAIRE

In March, 1960, forty-seven questionnaires¹ were sent out to students from the rural centralized schools who had taken or were taking their grade twelve at the Ponoka High School, to find out how these students compared the Ponoka school with the rural centralized schools.

These questionnaires contained stamped, addressed, return envelopes for the replies. About ten days later a follow-up letter² was sent out along with another questionnaire and a stamped, return envelope. Thirty-nine, or eighty-three per cent of the questionnaires, were returned.

For purposes of comparison, four questions from the student questionnaire were put into the form of a short questionnaire³ which was distributed to, and collected from, fifty-six students who had taken grade eleven at the Ponoka Senior High School in the previous year. These, including absentees, centralized school students, transfers in from

¹For sample, see Appendix A, pp. 126-130.

²For sample, see Appendix B, pp. 131.

³For sample, see Appendix C, pp. 132-133.

other schools, repeaters, would comprise the total grade twelve class in Ponoka for the school term 1959-60.

2. DATA OBTAINED FROM STUDENT QUESTIONNAIRE

TABLE XLVI

DISTRIBUTION BY SEX OF GRADE TWELVE STUDENTS
FROM THE CENTRALIZED SCHOOLS

Male	Female	Not Answered	Total
20	18	1	39

The information in Table XLVI indicates that both sexes were fairly evenly represented and that both masculine and feminine viewpoints would be expressed.

TABLE XLVII

DISTRIBUTION BY AGE OF GRADE TWELVE STUDENTS
FROM THE CENTRALIZED SCHOOLS

Age	16	17	18	19	20	21	22	23
Number of Students	1	5	11	10	7	3	1	1

The age range was from sixteen to twenty-three years, which indicated that the viewpoints expressed would be fairly representative of students who attended Ponoka Senior

High School during the past few years.

TABLE XLVIII

DISTRIBUTION BY YEAR OF GRADE TWELVE STUDENTS
FROM THE CENTRALIZED SCHOOLS

Year	1955-56	1956-57	1957-58	1958-59	1959-60	Not Answered
Number of students	5	3	9	10	11	1

Again, the information in the above table indicated that the viewpoints expressed would be fairly representative of students who attended Ponoka Senior High School during the past few years.

In the school term 1956-57 there were only five students from the rural centralized schools who attended Ponoka Senior High School, and a questionnaire return of three was, therefore, not unreasonable.

TABLE XLIX

DISTRIBUTION BY THE NUMBER OF YEARS OF SCHOOLING
RECEIVED IN A ONE-ROOM COUNTRY SCHOOL
OF THE GRADE TWELVE STUDENTS FROM
THE CENTRALIZED SCHOOLS

Years Spent in a One-Room School	0	1	2	3	4	5	6	7	8	9
Number of students	1	5	5	4	4	5	4	6	3	2

The foregoing figures indicated that most of the students received quite a few years of their early schooling in one-room country schools.

TABLE L

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS
REGARDED THEIR SCHOLASTIC ABILITY
BEFORE COMING TO PONOKA
SENIOR HIGH SCHOOL

Scholastic Ability	Number of Students
Greatly overestimated your ability	0
Somewhat overestimated your ability	14
Estimated your ability reasonably well	23
Somewhat underestimated your ability	2
Greatly underestimated your ability	0

Fourteen students stated that they had overestimated their scholastic ability whereas only two students stated they had underestimated their ability. This would seem to indicate that, perhaps, with the much smaller classes in the centralized schools (twelve students in grade eleven at the Mecca Glen School in the school year 1959-60), the students do not have a sound or realistic yardstick for comparing their abilities. For example, such a small class

could be a very mediocre group with no outstanding students. However, the student at the head of this small group might be regarded, and might regard himself, as being quite an able scholar.

TABLE LI

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS
ADJUSTED TO THE NEW SCHOOL
(PONOKA SENIOR HIGH SCHOOL)

Adjustment to the New School	Number of Students
Found it hard to adjust	3
Found it fairly hard to adjust	8
Found it fairly easy to adjust	24
Found it easy to adjust	4

The figures from the above table indicate that some students were more successful than others in coping with the problem of adjusting to a new school.

This period of adjustment with its accompanying emotional stresses would probably have some effect on the student's school work. Just how much would be difficult to assess.

TABLE LII

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS
 COMPARED THE QUALITY OF TEACHING IN
 PONOKA SENIOR HIGH SCHOOL WITH
 THE TEACHING IN THEIR OWN
 CENTRALIZED SCHOOL

Quality of Teaching	Number of Students
The teaching is much better in Ponoka	8
The teaching is better in Ponoka	20
The teaching is about the same in both places	8
The teaching is poorer in Ponoka	3
The teaching is much poorer in Ponoka	0

The above figures indicate that most of the centralized school students felt that there was better teaching at Ponoka Senior High School.

TABLE LIII

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS
AND FROM PONOKA SENIOR HIGH SCHOOL
FOUND THE WORK IN GRADE TWELVE

Work in Grade Twelve	Percentage of Centralized Students' Answers	Percentage of Ponoka Students' Answers
Much harder than you expected	2.6	10.7
Harder than you expected	38.5	26.9
About as hard as expected	51.3	57.1
Easier than you expected	7.7	5.4
Much easier than you expected	0	0

The above figures would seem to indicate that students from the centralized schools found the grade twelve work about the same as did students from Ponoka Senior High School.

TABLE LIV

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS
AND FROM PONOKA SENIOR HIGH SCHOOL
COMPARED THE AMOUNT OF HOMEWORK
IN GRADE ELEVEN WITH THE
AMOUNT IN GRADE TWELVE

Amount of Homework	Percentage of Centralized Students' Answers	Percentage of Ponoka Students' Answers
Much more homework in grade twelve	56.4	37.5
More homework in grade twelve	38.6	53.6
About the same amount of homework in both grades	5.1	8.9
More homework in grade eleven	0	0
Much more homework in grade eleven	0	0

The above percentages would indicate that students from the centralized schools thought that they had more homework in grade twelve than they had in grade eleven. To a lesser extent this was also the viewpoint of the Ponoka students.

One could also infer from these figures that the students from the centralized schools did less homework in grade eleven than the Ponoka school students did in grade eleven.

TABLE LV

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS
AND FROM PONOKA SENIOR HIGH SCHOOL
COMPARED THE AMOUNT OF WORK
COVERED IN GRADE ELEVEN
WITH THE AMOUNT OF WORK
COVERED IN GRADE TWELVE

Work Covered	Percentage of Centralized Students' Answers	Percentage of Ponoka Students' Answers
Covered much more work in grade twelve than in grade eleven	23.7	33.9
Covered more work in grade twelve than in grade eleven	50.0	48.2
Covered about the same amount of work in both grades	23.7	14.3
Covered more work in grade eleven than in grade twelve	2.6	3.6
Covered much more work in grade eleven than in grade twelve	0	0

The above percentages indicate that students from the centralized schools and also students from Ponoka Senior High School thought that they covered more work in grade twelve than they did in grade eleven.

One could also infer from these figures that the students from the centralized schools were covering about as much work in grade eleven as the students from Ponoka Senior High School were covering in grade eleven.

TABLE LVI

HOW STUDENTS FROM THE CENTRALIZED SCHOOLS AND
FROM PONOKA SENIOR HIGH SCHOOL COMPARED
THE NUMBER OF SPARE PERIODS IN GRADE
ELEVEN TO THE NUMBER IN GRADE TWELVE

Number of Spares	Percentage of Centralized Students' Answers	Percentage of Ponoka School Students' Answers
Had many more spares in grade twelve	5.1	12.5
Had more spares in grade twelve	12.8	53.6
Had about the same number of spares in each grade	30.8	25.0
Had more spares in grade eleven	30.8	8.9
Had many more spares in grade eleven	20.5	0

The above figures indicate that most Ponoka students had more spares in grade twelve than they had in grade eleven. Probably the reason for this is that because of the large number of options offered in Ponoka Senior High School at the grade ten and eleven levels, the Ponoka students were able to accumulate sufficient credits to be able to cut down on their grade twelve load and still obtain the necessary one hundred credits for a High School Diploma.

Most students from the centralized schools had more spares in grade eleven than they had in grade twelve. One reason for this might be that fewer options were offered at the centralized schools and as a result the students might be carrying smaller credit loads in both grades ten and eleven than their Ponoka counterparts. Thus, when they got to grade twelve they would be forced to take more credits in order to bring their total up to one hundred.

However, even if a student at the centralized school were carrying the same credit load as a student at the Ponoka school, the student from the centralized school would still have more spare periods. The reason for this is that with two teachers for three grades, the student would have, on the average, one spare period out of every three.

TABLE LVII
THINGS THAT STUDENTS LIKED ABOUT
THEIR CENTRALIZED SCHOOLS

Things Liked	Number of Student Answers
Closer teacher-student relationship.....	18
More student participation and interest in school sports and activities.....	15
Smaller classes; got more individual attention...	13
Friendlier atmosphere, better school spirits.....	13
Able to live at home.....	9
Better playground facilities.....	8
Fewer children, got to know them better.....	4
More spares.....	3
Much easier to excel in subjects and activities...	2
Pupils were all on about the same economic level..	2
Less expensive.....	2
Students didn't dress in the latest fashion.....	1
Students weren't so "clicky".....	1
Knew more about what was going on.....	1
Not so much homework.....	1
Less tension and worry, things were slower.....	1
More audio-visual aids.....	1
Shorter class periods.....	1
Good teachers.....	1
More efficient than one-room school.....	1
Gives rural children some of the opportunities that urban children have.....	1
A community centre.....	1

TABLE LVIII
THINGS THAT STUDENTS DISLIKED ABOUT
THEIR CENTRALIZED SCHOOLS

Things Disliked	Number of Student Answers
No choice of options.....	19
Lack of equipment, such as science, sports, library.	15
Courses not well covered, poorer teaching.....	14
Background for French was extremely poor.....	4
Too many lenient teachers.....	3
Long bus ride, much time wasted.....	3
No gymnasium	3
A lot of time wasted.....	2
Lower standards.....	2
Being together with another class in same room....	2
Some teachers' attitudes.....	1
Teachers did not have as much time to spend with individual students.....	1
Too much familiarity between pupil and teacher....	1
Arguments between teachers were made public.....	1
Poorer organization.....	1
Not enough review work	1
Not enough teachers.....	1
Not as many opportunities for sports.....	1
Limited club activities.....	1
Not enough incentive to work hard.....	1
Lack of competition and scholastic encouragement..	1
Short periods.....	1
Gathering of gangs.....	1
Elementary and high school students in same school	1

TABLE LIX

THINGS THAT STUDENTS FROM THE CENTRALIZED SCHOOLS
 LIKED ABOUT PONOKA SENIOR HIGH SCHOOL

Things Liked	Number of Student Answers
Teachers covered courses better; teachers were specialized and better qualified.....	24
Wider choice of subjects (electives).....	13
Better facilities.....	10
Higher standards.....	4
Better opportunity to get to know and to learn to get along with a wide variety of people.....	3
More variety in sports, clubs, activities.....	2
More chance to compare own work with others.....	2
Work you harder.....	2
Classroom contained just students taking the same subject, no distractions.....	1
Being with a larger group of students.....	1
More excitement.....	1
Students easier to get along with than expected...	1
Friendly school except for cliques.....	1
Longer periods.....	1
Individual student help from teachers.....	1
Variety of teachers.....	1
Better French teachers.....	1
More good looking girls.....	1

TABLE LX

THINGS THAT STUDENTS FROM THE CENTRALIZED SCHOOLS
DISLIKED ABOUT PONOKA SENIOR HIGH SCHOOL

Things Disliked	Number of Student Answers
Heavy homework load given by each teacher.....	8
Poorer school spirit.....	5
Harder to get acquainted, too many students.....	4
Actions of some of the cliques, division of students according to financial status.....	4
Teachers and pupils were more or less strangers...	3
Teaching is more impersonal.....	2
Some teachers.....	2
Some teachers felt that generally students from the centralized schools were behind in their work although this wasn't always the case. Country students were "picked on".....	2
Some teachers could not get their ideas across....	2
Speed up; no time to explain hard problems.....	2
Too many students in each class.....	2
No sports activities.....	2
Not enough student participation.....	2
Detention--felt it was unwarranted at times.....	2
Less individual attention because of larger classes	2
Inefficient supervision of study periods.....	1
Methods of testing.....	1
Few spares.....	1
A different teacher for each subject.....	1
Some facilities not used to extent they could be...	1

TABLE LX
(continued)

Things Disliked	Number of Student Answers
The way some subjects are forced and some are offered.....	1
Not permitted in lab.....	1
Principal	1
Less chance of being "top" in a class with so many students.....	1
Rivalry between town and country students.....	1
Unfriendly atmosphere.....	1
Bad manners of many students.....	1
Bad attitudes of some students, little co-operation.....	1
Students did not mix well.....	1
Disadvantage of incoming country students.....	1
Big rush to get to school and to classes.....	1
Rush, rush, hard to feel that teachers are on your side rather than against you.....	1
Math. and physics in the afternoon.....	1
Narrow halls, small entrances.....	1
Too many regulations.....	1

TABLE LXI

WHERE STUDENTS FROM THE CENTRALIZED
SCHOOLS THOUGHT THEY RECEIVED
THE BETTER SCHOOLING

Schooling	Received Better Schooling at Ponoka	Received Better Schooling at Central- ized school	Received the same School- ing in both places	Not Answered
Number of Student Selections	27	7	3	2

Seven students thought that they received better schooling in their centralized school, whereas twenty-seven thought that they received better schooling in Ponoka.

The next table indicates why the students made the choice they did.

TABLE LXII

REASONS THAT STUDENTS GAVE FOR THINKING THAT
THEY RECEIVED BETTER SCHOOLING AT THEIR
CENTRALIZED SCHOOL THAN THEY DID AT
PONOKA SENIOR HIGH SCHOOL

Reasons Given	Number of Students Giving the Reason
The teachers were interested and gave help with school and with personal problems and understood the student better.....	3
The method of teaching was better.....	2
You could talk and discuss problems more freely with teachers.....	1
The teachers participated more in school events...	1
You did not resent teachers and homework.....	1
More time was spent on explaining problems.....	1
The school day was more enjoyable.....	1
Learning came easier--an active body fosters an active brain.....	1
The work was covered more thoroughly.....	1
There was a better group of students to work with.	1
If you missed one day you could catch up, but in Ponoka it was like missing a week. Either I was more interested or the teachers made the work more interesting.....	1

TABLE LXIII

REASONS THAT STUDENTS GAVE FOR THINKING THAT
THEY RECEIVED BETTER SCHOOLING AT
PONOKA SENIOR HIGH SCHOOL THAN
THEY DID AT THEIR OWN
CENTRALIZED SCHOOL

Reason Given	Number of Students Giving the Reason
Teachers--specialized and better qualified.....	21
Wider choice of subjects--suit own interests.....	7
More students, more competition, better chance for comparison of work.....	4
Longer periods, more time to spend on each subject.....	4
Facilities: more and better.....	3
Higher standards.....	3
Less time wasted.....	2
Better discipline.....	2
Worked harder.....	2
Learn or get out.....	2
Learned more.....	1
More serious approach to each subject.....	1
More pressure put on student.....	1
More homework.....	1
Better library.....	1
Daily or weekly quizzes.....	1
Benefit of living away from home for the first time	1

3. DISCUSSION OF STUDENT QUESTIONNAIRE RESULTS

In spite of, or perhaps because of, more homework, more competition, fewer spare periods, longer periods, more pressure, better discipline, and higher standards at Ponoka, the great majority of the students from the centralized schools felt that they received better schooling at the Ponoka school, even though it may not have been as enjoyable.

In addition to the above, there were two main reasons given by students to explain why they thought they received better schooling at Ponoka. One reason was that the students felt that Ponoka teachers were more specialized, more highly qualified, and did a better job of teaching. The other reason was that the Ponoka school offered a wider choice of subjects to suit the individual needs of the students.

The minority who felt that they received better schooling at the centralized schools emphasized other more intangible values. They mentioned such things as better school spirit, friendlier and easier school atmosphere, helpful and understanding teachers, and closer teacher-student relationship. They thought that the general tone of the centralized schools was more conducive to learning.

CHAPTER VI

TEACHER QUESTIONNAIRE RESULTS

1. Questionnaire

In May, 1960, fifty questionnaires¹ were given to all the teachers in Ponoka. Twenty-five questionnaires were given to all of the teachers at the centralized schools. These questionnaires, in addition to obtaining information about the teachers, also attempted to discover how teachers compared the Ponoka schools with the rural centralized schools.

The procedure was to meet with the principal of each school, go over the questionnaire with him, and answer any questions which he might have. The principal then, usually at a staff meeting, distributed the questionnaires among his teachers and answered any questions which they might raise.

The questionnaires, when completed, were returned to the principal. These were then collected from each principal. A total of sixty-eight questionnaires were returned, about a ninety per cent return.

¹For sample, see Appendix D, pp. 134-136.

2. DATA OBTAINED FROM TEACHER QUESTIONNAIRE

TABLE LXIV

AVERAGE YEARS OF TEACHER TRAINING POSSESSED
BY TEACHERS IN THE PONOKA AND IN THE
CENTRALIZED SCHOOLS

School	Average Years of Teacher Training
Centralized schools (grades 1-8)	1.3
Ponoka schools (grades 1-8)	1.4
Centralized schools (grades 9-11)	3.0
Ponoka schools (grades 9-12)	4.2
Centralized schools (grades 1-11)	1.6
Ponoka schools (grades 1-12)	2.2

In the lower grades (1-8) the teachers are very close as to the number of years of teacher training which they have. The figures for the upper grades indicate that the Ponoka teachers have more years of teacher training.

On the average the Ponoka teachers have about one and a third times as many years of teacher training as the centralized school teachers.

TABLE LXV

AVERAGE YEARS OF TEACHING EXPERIENCE POSSESSED
BY TEACHERS OF THE PONOKA AND
THE CENTRALIZED SCHOOLS

Teachers	Average Years of Teaching Experience of the Teachers
Teachers of centralized schools (grades 1-8)	7.9
Teachers of Ponoka schools (grades 1-8)	12.7
Teachers in centralized schools (grades 9-11)	13.0
Teachers in Ponoka schools (grades 9-12)	17.1
Teachers in centralized schools (grades 1-11)	8.8
Teachers in Ponoka schools (grades 1-12)	13.9

The above figures indicate that at both the lower and the upper grade levels the Ponoka teachers have about five years more teaching experience than the teachers in the centralized schools.

Other results of the teacher questionnaire showed that in the lower grades there were very few teachers with specialized training. Most of the special areas or special field teachers were teaching in the high school grades.

The high school teachers in the centralized schools were teaching subjects in their own special areas as well as subjects in other areas. However, practically all the high school teachers in the Ponoka Senior High School were teaching only subjects in their special field.

In the Ponoka school system there were several classes for each grade and a teacher in charge of each class.

In the centralized schools of Crestomere and Mecca Glen there was one teacher per grade in the lower grades. However, in grades nine, ten, and eleven there were only two teachers for these three grades.

In the centralized school of Sylvan Heights there was one teacher for two grades at the lower levels and then one teacher for grades nine, ten, and eleven.

The average number of courses taught by Junior and Senior High School teachers in Ponoka was 4.6. The average number of courses taught by Junior and Senior High school teachers in the centralized schools was 11.2.

The average size of class taught by the Junior and

Senior High School teachers in Ponoka was 27.1 pupils. The average size of class taught by the Junior and Senior High School teachers in the centralized schools was 20.3 pupils.

In the Ponoka Junior and Senior High Schools the average length of the class period was thirty-eight minutes.

In the centralized schools the average length of class period in the Junior and Senior High Schools was twenty-seven minutes.

TABLE LXVI

HOW TEACHERS IN THE PONOKA SCHOOL AND THE
CENTRALIZED SCHOOLS COMPARED THE GRADE
NINE DEPARTMENTAL EXAMINATION
RESULTS OF THESE SCHOOLS

Comparison of Examination Results	Number of Ponoka Teachers' Answers	Number of Centralized Teachers' Answers	Total of all Answers
Results are much better in the centralized schools	0	0	0
Results are better in the centralized schools	3	3	6
Results are about the same	9	8	17
Results are worse in the centralized schools	8	0	8
Results are much worse in the centralized schools	0	1	1
No opinion	24	12	36

As the above table shows, a large number of teachers did not venture an opinion. Most of these teachers stated that they were not in possession of enough facts to enable them to give a worthwhile opinion.

Whereas eight teachers from Ponoka thought that results from the centralized schools were worse, only one teacher from the centralized schools thought so. This would seem to indicate that generally teachers from the centralized schools thought that their students' marks

compared very favourably with the Ponoka students' marks.

TABLE LXVII

HOW TEACHERS IN THE PONOKA SCHOOL AND THE CENTRALIZED SCHOOLS COMPARED THE GRADE TWELVE DEPARTMENTAL EXAMINATION RESULTS OF STUDENTS FROM THE CENTRALIZED SCHOOLS WITH THE RESULTS OF STUDENTS FROM THE PONOKA SCHOOL

Comparison of Examination Results	Number of Ponoka Teachers' Answers	Number of Centralized Teachers' Answers	Total of all Answers
Results are much better for the students of the centralized schools	0	0	0
Results are better for the students of the centralized schools	0	0	0
Results are about the same	5	8	13
Results are worse for students from centralized schools	13	1	14
Results are much worse for students from centralized schools	2	0	2
No opinion	25	14	39

Again, as the above table indicates, a large number of teachers felt that they did not possess enough information to make a comparison.

Here again, only one teacher from the centralized schools thought that the results from the centralized schools were worse, whereas fifteen teachers from Ponoka thought so.

There were no teachers from any school who thought that the examination results of students from the centralized schools were better than the examination results of the Ponoka Senior High School students.

TABLE LXVIII

REASONS TEACHERS GAVE FOR BELIEVING THAT GRADE NINE EXAMINATION RESULTS WERE BETTER IN THE CENTRALIZED SCHOOLS

Reasons Given:

1. Opinion--hard to say; it could be the environment difference.
2. Two out of three students have won Governor-General's Medals in the past few years.
3. Opinion--I feel students enjoy an equality of background, opportunity, and purpose. School activities (social and athletic) are geared to a uniform situation.
4. Students all have similar backgrounds. The students know each other better and exchange common knowledge via comparison.
5. Mecca Glen students made 100% clear pass last year.

TABLE LXIX
REASONS TEACHERS GAVE FOR BELIEVING THAT GRADE
NINE EXAMINATION RESULTS WERE THE SAME
FOR BOTH THE PONOKA SCHOOL AND
THE CENTRALIZED SCHOOLS

Reasons Given

1. No reason--merely opinion based on the idea that lack of so many diversions may counteract less-experienced teachers and fewer facilities of the centralized schools.
2. Less variation in instruction; generally the grades up to nine are not affected by departmentalization and generally there is less specialization by teachers up to this point.
3. No special reasons--just what I have been told, and have had no opportunity to compare results.
4. Taught in both kinds of schools and secured comparable results.
5. They are all bus students and have a similar environment.
6. Opportunities in all the centralized schools from grades one to nine are very nearly equal to those in Ponoka and there are more distractions (extra-curricular activities) for students in the Ponoka school.
7. Opinion--believe our results are quite good.
8. An intelligent pupil with poor to good instruction will make good marks in spite of difficulties because he will work well wherever he is.
9. The dominating factors are the pupil's ability and interest as well as his confidence in his teachers.
10. Percentage of failures has been low; percentage of high marks has been favourable; students who leave to attend other schools do well.
11. I have taught grade nine and have kept in touch with students who have gone on.
12. Statistics bear this out, I believe.

TABLE LXX

REASONS TEACHERS GAVE FOR BELIEVING THAT
GRADE NINE EXAMINATION RESULTS WERE
WORSE IN THE CENTRALIZED SCHOOLS

REASONS GIVEN

1. The teachers in Ponoka are better qualified.
 2. The teachers in Ponoka are more specialized.
 3. The teachers in Ponoka work harder--they have more competition.
 4. The standards are perhaps higher in Ponoka.
 5. The honour students seem to come mostly from Ponoka.
 6. There is more than one teacher per grade and instruction is improved through teacher co-operation.
 7. The basic elementary school training which pupils receive in Ponoka is very much superior to that which they receive in the centralized schools.
 8. I have taught many of these pupils previously and know that the results are inferior to Ponoka results; these students have not been working to capacity.
 9. The marks do not compare, but these students, because they are not getting as much attention, have developed successful learning systems of their own.
-

The one teacher who thought that examination results were much worse in the centralized schools did not give any reason for thinking that way.

TABLE LXXI

REASONS TEACHERS GAVE FOR BELIEVING THAT GRADE
TWELVE EXAMINATION RESULTS WERE ABOUT THE
SAME FOR BOTH THE PONOKA SCHOOL AND
THE CENTRALIZED SCHOOLS

Reasons Given

1. If a student has the required mental ability and study habits, he can catch up and even pass others.
 2. A study of 1955-56 June examination results seemed to indicate equal results.
 3. No special reason--just what I have been told. I have had no opportunity to compare results.
 4. The percentage of centralized school students finishing grade twelve is small--only the best complete. There is no area for comparison.
 5. Opinion--there is the loss of home atmosphere for the centralized school student but many have breached the gap.
 6. Opinion--I believe our students have made out quite well.
 7. Over a period of years Mecca Glen students as a group have held their own academically.
-

The remainder of the teachers who thought that examination results were about the same did not give any reasons for their beliefs.

TABLE LXXII

REASONS TEACHERS GAVE FOR BELIEVING THAT GRADE
TWELVE EXAMINATION RESULTS WERE WORSE FOR
STUDENTS FROM THE CENTRALIZED SCHOOLS

Reasons Given	
1.	The students face stiffer competition.
2.	The teachers in Ponoka are more specialized.
3.	The teachers in Ponoka have more training and experience.
4.	The teachers are more aware of the requirements for grade twelve examinations.
5.	There is more inservice training done in town.
6.	The teachers in Ponoka are more conscientious because of competition.
7.	The students from the centralized schools are in a new environment.
8.	The honour students seem to be mostly from Ponoka.
9.	There are better facilities in town.
10.	There is a lack of parental supervision of some of the centralized students who live in town.
11.	The backgrounds of some of the students coming into town are very weak.
12.	There is an orientation time loss for many of the centralized school students.
13.	The cycling of material in grades ten and eleven may have some effect.

TABLE LXXII
(continued)

Reasons Given

14. The pupils with whom I am acquainted say that they find grade twelve in Ponoka almost impossibly difficult.
15. The observation of similar students, some with grade eleven in Ponoka, and some with grade eleven in a centralized school, and the checking of actual results for students of similar ability, leads me to this conclusion.
16. The larger groups in Ponoka give more opportunity for evaluation of pupil progress during the year with possible reinforcement of instruction.
17. The basic school training which pupils receive in the lower grades in Ponoka is very much superior.

3. DISCUSSION OF TEACHER QUESTIONNAIRE RESULTS

The great majority of the teachers did not wish to express an opinion on the examination results of the Ponoka and the centralized schools. They stated that they were not in possession of enough facts to make any worthwhile comparisons.

Of the teachers who did express an opinion the majority thought that examination results for the Ponoka and the centralized schools were about the same. Many gave no reason for thinking this way--just that it was an opinion which was not based on good or sufficient facts. Others felt that the situations at the different schools were fairly comparable and that the results should be comparable. Still others felt that even though the environments might not be the same each had advantages which counteracted the disadvantages.

Most of the teachers from the centralized schools felt that their students were doing at least as well as the Ponoka students. However, twenty-three Ponoka teachers felt that examination results were worse for the centralized schools. Many reasons were given for this judgment. Some thought that the Ponoka results were better because the teachers were better qualified, had more experience,

were specialized, worked harder. Others thought that standards were higher, competition was keener, and that the Ponoka elementary students received superior basic training. Still others based their decisions on personal observations of both kinds of students.

CHAPTER VII

SUMMARY AND CONCLUSIONS

Complaints that students from the rural centralized schools in the County of Ponoka were not doing as well on their departmental examinations as were students from the Ponoka schools do not appear to be justified. Ponoka Junior High School did have better results for grade nine literature, but, on the other hand, the rural centralized school of Mecca Glen had better results than the Ponoka school in grade nine social studies in 1959. At the grade twelve level the small differences in means were statistically not significant.

No attempt was made to generalize the findings of this study to the broad educational scene. Therefore, the following interpretive conclusions apply only to the educational system within which the study was performed; namely, the County of Ponoka.

There are many factors which, it would seem, could produce differences between the departmental examination results of the Ponoka and the centralized schools.

The teachers in Ponoka had more years of training, were more experienced, and at the high school level had fewer courses to teach, and were generally able to teach in the special fields for which they had been trained.

Although this study offers no supporting evidence regarding the availability of teachers in rural areas, it would not seem unreasonable to state that during the past few years the rural centralized schools have generally been unable to pick and choose their teachers. They have had to take what was available. There appear to be two reasons for this. One is that there has been a shortage of teachers, and the other reason is that urban positions have usually been more attractive to teachers than rural positions. A teacher with one year of training and with no experience could obtain a position in Ponoka only with a certain amount of difficulty, but could easily obtain one at the rural centralized schools.

The less experienced and less qualified teachers at the rural centralized schools were further handicapped in many cases by having to teach more than one grade and by having less time to devote to each subject--twenty-seven minutes per period in the high school as compared to Ponoka's thirty-eight minutes per period.

The situation of more than one grade per teacher resulted in the rural centralized school student having more spare periods during the day--periods when he was left more or less to himself with no teacher to help or guide him. These were periods when the student might waste time, or when he might learn self-discipline and the ability to work without supervision.

Apparently students at the rural centralized schools did less homework in grade eleven than did their Ponoka counterparts. It would seem, other things being equal, that rural centralized school students would probably learn less in grade eleven and thus be less well-prepared for grade twelve.

Many of the student questionnaires indicated that students thought that in Ponoka standards were higher, facilities were better, and that competition was stiffer. Also, many students stated that they had overestimated their academic abilities. Perhaps, with somewhat less competition at the rural centralized schools, there were some students who were not challenged and who took their studies rather casually. However, it is possible that in grade twelve these students may have risen to the challenge.

No doubt the move from a school where the student knew all the other students and the teachers very well to a school where nearly everyone was a complete stranger and where things were done differently would have had some adverse effects on learning. Each rural centralized school student coming to Ponoka Senior High School would have to make this adjustment. Just how much this affected his studies would be difficult to say.

Nearly all of the students from the rural centralized

schools, who took their grade twelve in Ponoka Senior High School, received years of their early schooling in one-room country schools where one teacher often taught all grades from one to nine. The background of these students would no doubt have some effect on their grade twelve results. Again, just how much would be rather difficult to assess.

Apparently all these seeming drawbacks were not very important as far as examination results were concerned. If they were important, they were apparently counteracted by such things as better school spirit, co-operation, initiative, and self-discipline on the part of the students from the rural centralized schools. Perhaps the interpretations made by Andrews in a similar study, which was described in Chapter 2, may offer the explanation. He concluded:

...It cannot be said that consolidation in this setting has increased academic achievement to any great extent as it can be measured by standardized achievement tests. This does not necessarily constitute a disparagement of consolidation, however. The effect of consolidation, in this setting as elsewhere, has been to produce the comprehensive school in which achievement in the fundamental academic subjects is but one of several emphases. To a large extent the small rural school, unable to support a comprehensive program, has retained such achievement as its single most important emphasis. To say that the consolidated school is equal or only slightly superior to the rural school in achievement in fundamentals is to affirm at least equal strength in an aspect of its programme which would logically be considered most vulnerable.¹

Of course, as was stated at the beginning of this study,

in Chapter I, examination results do not necessarily decide which are the better schools. There are many criteria other than marks for judging the worth of a school.

Other values of a school were pointed out when the majority of the students, in answering the questionnaires, made repeated reference to the quality of the teaching in Ponoka Senior High School. They stated that the teachers appeared to be better qualified, knew their subject well, and generally did a better job of teaching than did the teachers at the centralized schools.

Students also repeatedly mentioned that they liked the idea of having some choice of subjects. In the rural centralized schools all of the students were limited to one program, the academic, which may not have suited their particular needs or interests.

In addition, many students were much impressed with the better facilities at Ponoka Senior High School. They made special reference to the better library services, the more fully equipped science laboratory, and the quality and variety of the sports programs.

¹J. H. M. Andrews, "The Effect of Secondary Consolidation Upon Achievement in Fundamentals and Unit Cost" (unpublished Master's thesis, The University of British Columbia, Vancouver, 1954), p. 69.

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APPENDIX A

Student Questionnaire

Dear Student or Ex-Student:

I wonder if you would help us out with this questionnaire, which is part of an attempt to find out how students in the rural centralized schools of Crestomere, Mecca Glen, and Sylvan Heights compare with students of the Ponoka High School.

Do not put your name on the paper. We are not interested in names--only in answers.

It is easy to do. There are only a few items to check off. We would appreciate it if you would complete this as soon as possible and return it in the envelope provided.

Thank you.

QUESTIONNAIRE

Please underline the appropriate items:

1. Your sex is: Male, Female
2. Your present age is: 16, 17, 18, 19, 20, 21, 22, 23, 24
3. The year(s) in which you took your grade twelve in Ponoka were: 1955-6, 1956-7, 1957-8, 1958-9, 1959-60
4. How many years of your early schooling did you receive in a one-room country school?

0, 1, 2, 3, 4, 5, 6, 7, 8

5. How did you find the work in Grade 12?
 - (1) Much harder than you expected
 - (2) Harder than you expected
 - (3) About as hard as you expected
 - (4) Easier than you expected
 - (5) Much easier than you expected
6. How did you adjust to the new school (Ponoka High School)?
 - (1) Found it hard to adjust
 - (2) Found it fairly hard to adjust
 - (3) Found it fairly easy to adjust
 - (4) Found it easy to adjust
7. Generally, how would you compare the quality of teaching in Ponoka with the teaching in your centralized school?
 - (1) The teaching is much better in Ponoka
 - (2) The teaching is better in Ponoka
 - (3) The teaching is about the same in both places
 - (4) The teaching is worse in Ponoka
 - (5) The teaching is much worse in Ponoka
8. How did your homework load compare?
 - (1) Much more homework in Ponoka
 - (2) More homework in Ponoka
 - (3) About the same amount of homework in both places
 - (4) More homework in the centralized school
 - (5) Much more homework in the centralized school

9. How about the amount of work covered?
- (1) Covered much more work in Grade 12 than in Grade 11
 - (2) Covered more work in Grade 12 than in Grade 11.
 - (3) Covered about the same amount of work in both grades.
 - (4) Covered more work in grade 11 than in Grade 12
 - (5) Covered much more work in Grade 11 than in Grade 12
10. How about the spare periods?
- (1) Had many more spares in Ponoka
 - (2) Had more spares in Ponoka
 - (3) Had about the same number of spares in both places
 - (4) Had more spares in the centralized school
 - (5) Had many more spares in the centralized school
11. How did you regard your scholastic ability before coming to Ponoka High School?
- (1) Had greatly overestimated your ability
 - (2) Had somewhat overestimated your ability
 - (3) Had estimated your ability reasonably well
 - (4) Had somewhat underestimated your ability
 - (5) Had greatly underestimated your ability

12. (a) What things did you like about your centralized school?

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

(b) What did you dislike about your centralized school?

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

13. (a) What things did you like about Ponoka school?

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

(b) What things did you dislike about Ponoka High School?

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

14. (a) At which school did you receive the better schooling?

Ponoka, or your centralized school

- (b) What are your reasons for making the above choice?

- (1) _____
- (2) _____
- (3) _____
- (4) _____

Thank you.

APPENDIX B

The Follow-up Letter to the Student Questionnaire

Dear Student or Ex-Student:

A short time ago I asked if you would help me out with a questionnaire. I know it is easy to forget and I know that there is no reason why you should do any work for me. But in order for the results of this study to be of any value, it is quite important that I have as many of the questionnaires returned as soon as possible.

As I stated before, I am not interested in knowing who says what. No one will ever know your answers. It is only the collective data which is of interest.

I hope you will respond to my request. I will certainly appreciate your efforts.

Please disregard this letter if you have already completed and sent in the questionnaire, and many thanks to you for your co-operation.

Yours truly,

APPENDIX C

Comparison Questionnaire

Dear Student:

I wonder if you would help out with this questionnaire which is an attempt to find out how students compare Grade Eleven with Grade Twelve.

You need not put your name on the paper. We are not interested in names--only in answers.

Thank you.

Please underline the appropriate items:

1. How did you find the work in Grade 12?
 - (1) Much harder than you expected
 - (2) Harder than you expected
 - (3) About as hard as you expected
 - (4) Easier than you expected
 - (5) Much easier than you expected
2. How did your homework load compare?
 - (1) Much more homework in Grade 12
 - (2) More homework in Grade 12
 - (3) About the same amount of homework in both grades
 - (4) Much more homework in Grade 11
 - (5) More homework in Grade 11

3. How about the amount of work covered?
- (1) Covered much more work in grade 12 than in grade 11.
 - (2) Covered more work in grade 12 than in grade 11
 - (3) Covered about the same amount of work in both grades
 - (4) Covered more work in grade 11 than in grade 12
 - (5) Covered much more work in grade 11 than in grade 12.
4. How about the spare periods?
- (1) Had many more spares in grade 12
 - (2) Had more spares in grade 12
 - (3) Had about the same number of spares in both grades
 - (4) Had more spares in grade 11
 - (5) Had many more spares in grade 11

APPENDIX D

Teacher Questionnaire

Dear Teacher:

In this short questionnaire we are asking you to help us make a survey of certain teaching factors in the rural centralized schools of Crestomere, Mecca Glen, Sylvan Heights, and in the Ponoka schools.

We hope to be able to give you the results of this survey.

Do not put your name on the paper. We are not interested in names--only in answers.

It is easy to do. There are only eight items. We would appreciate it if you would complete this as soon as possible.

Please place this questionnaire in the envelope provided and seal the envelope. Give the envelope to your principal.

Thank you.

1. How many years of teacher training do you have? _____
Do not count fractions of a year.
2. How many years of teaching experience do you have? _____
3. In which areas or fields, if any, have you specialized or majored? _____

4. Your school day is divided into teaching periods. How many minutes long is this period in which you can give instruction? _____
5. What grade or grades are you teaching this year?

6. If you are a junior or senior high school teacher please list the courses you are teaching this year and the approximate number of students that you have in each course.

<u>Course</u>	<u>Number of Students</u>	<u>Course</u>	<u>Number of Students</u>
1. _____	_____	7. _____	_____
2. _____	_____	8. _____	_____
3. _____	_____	9. _____	_____
4. _____	_____	10. _____	_____
5. _____	_____	11. _____	_____
6. _____	_____	12. _____	_____

Please underline the appropriate items. (New teachers who have no opinion on the following items need not answer them.)

7. (a) How do you think that the grade nine departmental examination results of students in the rural centralized schools of Crestomere, Mecca Glen, and Sylvan Heights compare with the results of similar farm students who attend school in Ponoka?
- (1) Results are much better in the centralized school.
- (2) Results are better in the centralized school
- (3) Results are about the same
- (4) Results are much worse in the centralized school.
- (5) Results are worse in the centralized school
- (6) No opinion

(b) What are your reasons for making the above choice?

(1) _____

(2) _____

(3) _____

(4) _____

8. How do you think the grade twelve departmental results of students from the rural centralized schools of Crestomere, Mecca Glen, and Sylvan Heights compare with the results of similar farm students who have taken all or part of their schooling in Ponoka?

(1) Results are much better for the students from the centralized schools

(2) Results are better for the students from the centralized schools

(3) Results are about the same

(4) Results are worse for the students from the centralized schools

(5) Results are much worse for the students from the centralized schools

(6) No opinion

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